

TYLin

Public Meeting

KITTERY ROUTE 1 CORRIDOR STUDY
WIN 026680.00

January 24, 2024



Kittery
MAINE





Agenda

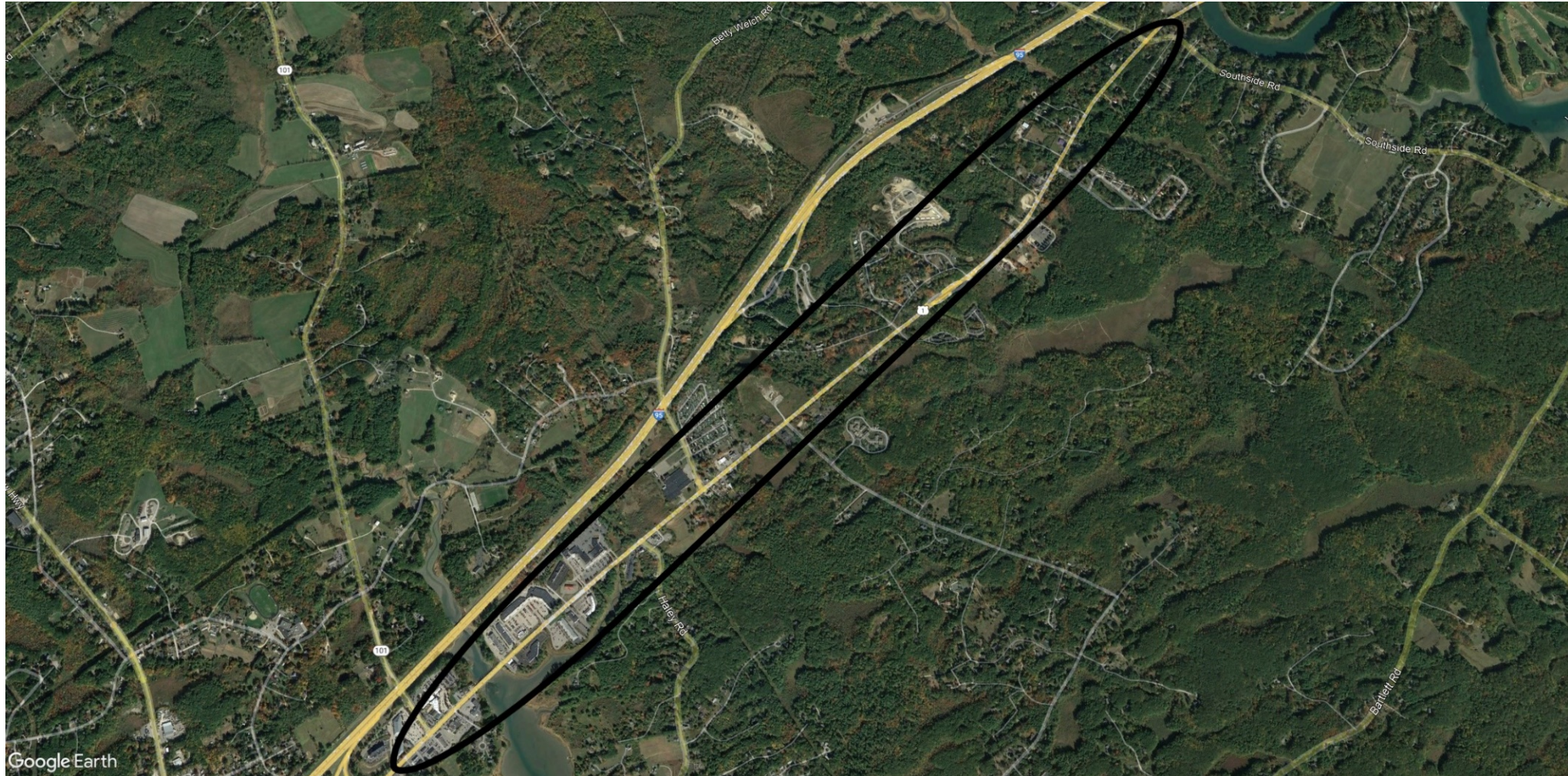
1. Introductions
2. Study Area/Study Objective/Purpose
3. Public Meeting 1 Recap
4. Build Out Scenarios
5. Transportation Alternatives for Consideration
6. Active Transportation Alternatives
7. Schedule
8. Public Input/Comments



Study Advisory Committee

- Jason Garnham, Town of Kittery
- Dave Rich, Town of Kittery
- Jessa Kellogg, Town of Kittery
- Marty Rooney, MaineDOT
- Stephanie Carver, SMPDC
- Dean Williams, SMPDC
- Tom Errico, TYLin
- Shawn Davis, TYLin
- Mitchell Rasor, Rasor Landscape Architecture
- Jeff Preble, Wright Pierce
- Jason Gallant, Wright Pierce

Study Area





Study Purpose and Need

- Better align the transportation corridor along Route 1 with desired redevelopment (a mixed-use residential village).
- Identify strategies to improve safety and mobility for all transportation modes.
- Identify short-term safety improvements associated with pedestrian crossing needs.
- Evaluate long-term corridor conceptual improvements that provide safe access as well as bicycle and pedestrian accommodations.



Public Meeting #1 (9/27/23) Recap

1. Through Traffic vs. Outlet Traffic
2. Prioritizing Spruce Creek and Environmental Impacts
3. Wilson Road signal function in fixed time mode and allows for better access/egress from KTP driveway on Wilson Road
4. A signal at KTP/Cottage should be considered even though it was denied previously due to proximity to Wilson signal
5. Lack of connectivity due to the interchange, while not part of this study, should be reflected in recommendations at southern end of study area
6. How does decline of retail impact future buildout of area – although KTP is growing.
7. Bike safety from Haley to Cutts is a concern, particularly with traffic movements from Dunkin and Yummy's.
8. Beech Ridge traffic signal does not work well as green time on Route 1 is short.
9. Trees/bushes encroach into roadway and create safety concerns for bicyclists and others.
10. Traffic is growing and should be assumed.
11. Future Development like to 300 apartment complex should be accounted in the study.
12. While not a high crash location, Lewis Road is a concern and should be monitored.



Planning Approach

- Develop growth scenarios to illustrate the implications of growth in regard to the design of Route 1.
- Investigate a range of Route 1 designs to encourage bike / pedestrian activity, improve aesthetics, and strike a balance between mobility and placemaking



Traffic Growth Assumptions

Scenario 1 – 20 Years

- 1000 Residential Units
- 2 hotels
- 100,000 SF Retail/Restaurant/Entertainment
- 15,000 SF Office
- Redevelopment of some of the existing outlets

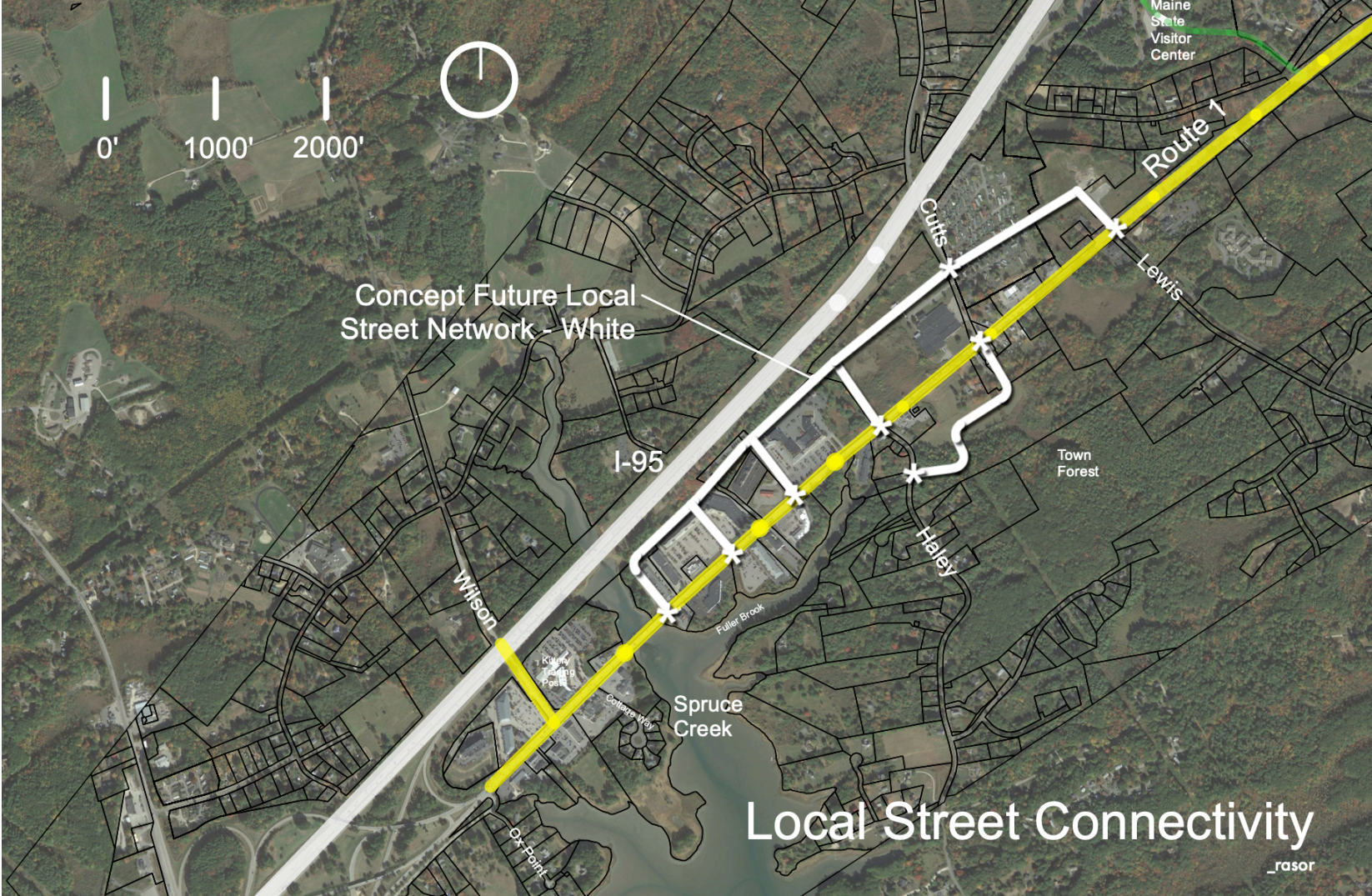
Scenario 2 – 20 Years

- 2000 Residential Units
- 5 Hotels
- 200,000 SF Retail/Restaurant/Entertainment
- 25,000 SF Office
- Redevelopment of more outlets than in Scenario 1

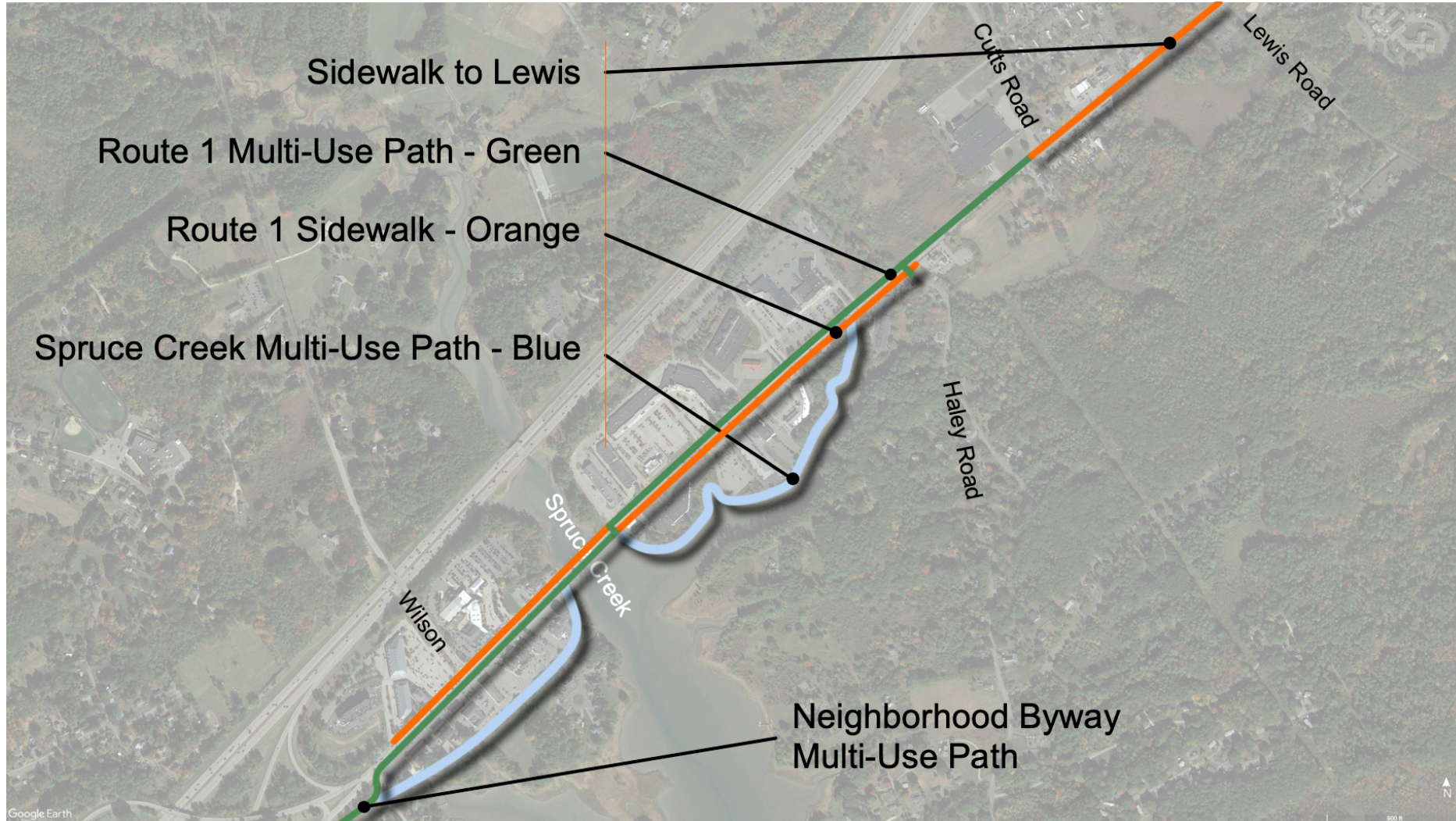
Build Out Analysis – Scenario Ex. Zoning



Connectivity



Pedestrian and Bike System

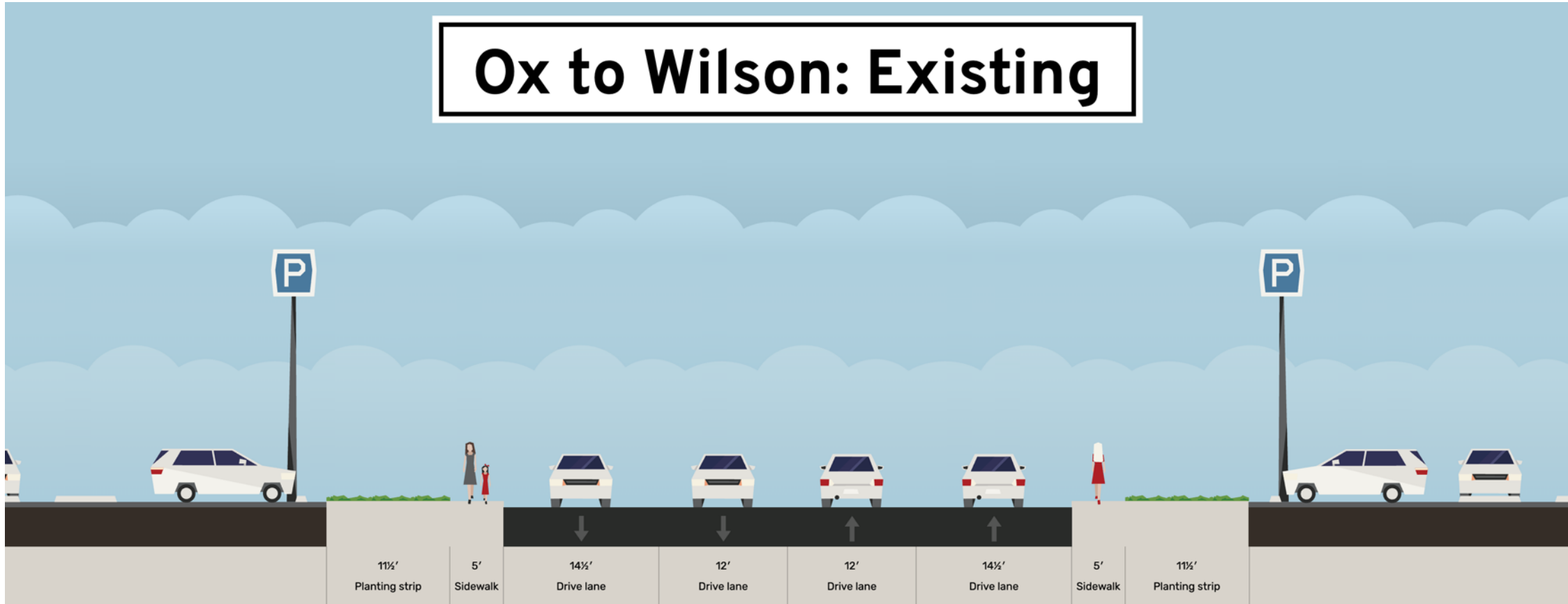


Roadway Alternatives



Ox Point to Wilson – Existing

Ox to Wilson: Existing



ROW=86'
Width=63'

Ox Point to Wilson – Option 1

Ox to Wilson: Restripe



11½' Planting strip 5' Sidewalk 4½' Buffer 11' Drive lane 11' Drive lane 11' Drive lane 11' Drive lane 4½' Buffer 5' Sidewalk 11½' Planting strip

ROW=86'
Width=63'

Pros:

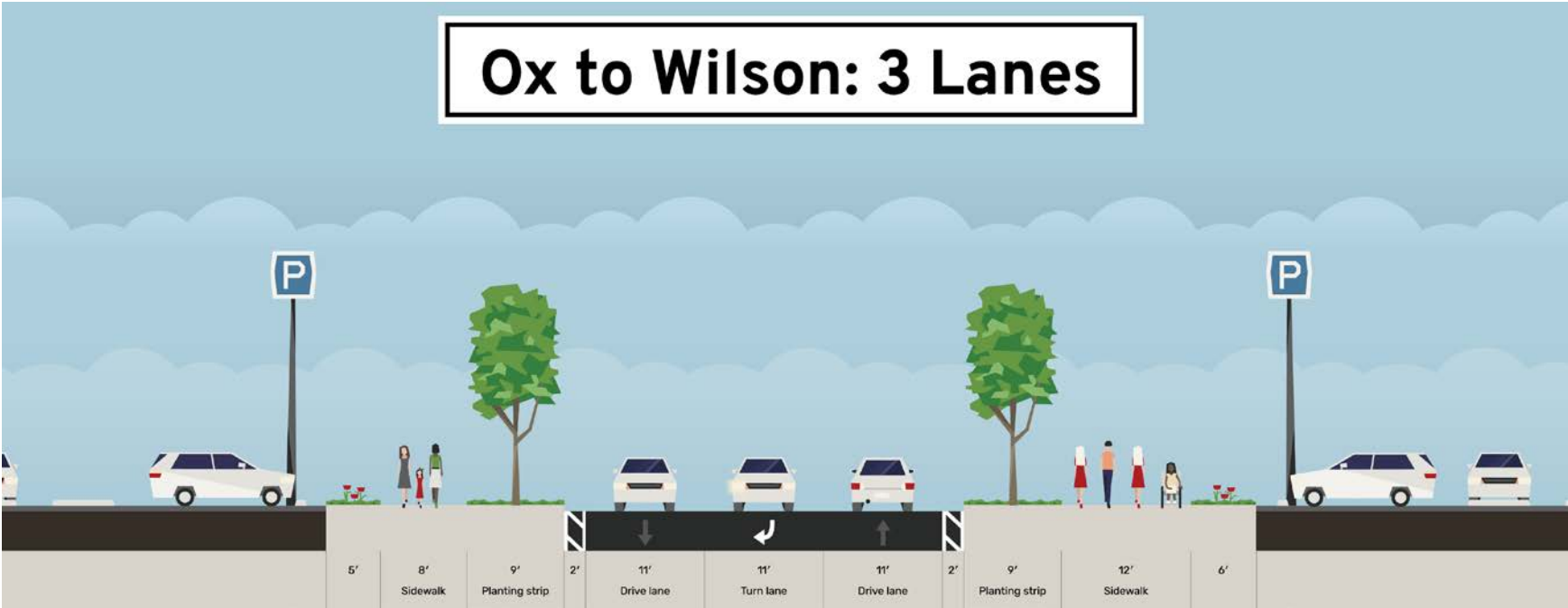
- No or low cost.
- No widening impacts to abutting properties.

Cons:

- Does not address safety issues.
- Mobility impacted by left turns.
- No bicycle accommodations.

Ox Point to Wilson – Option 2

Ox to Wilson: 3 Lanes



ROW=86'
Width=86'

Pros:

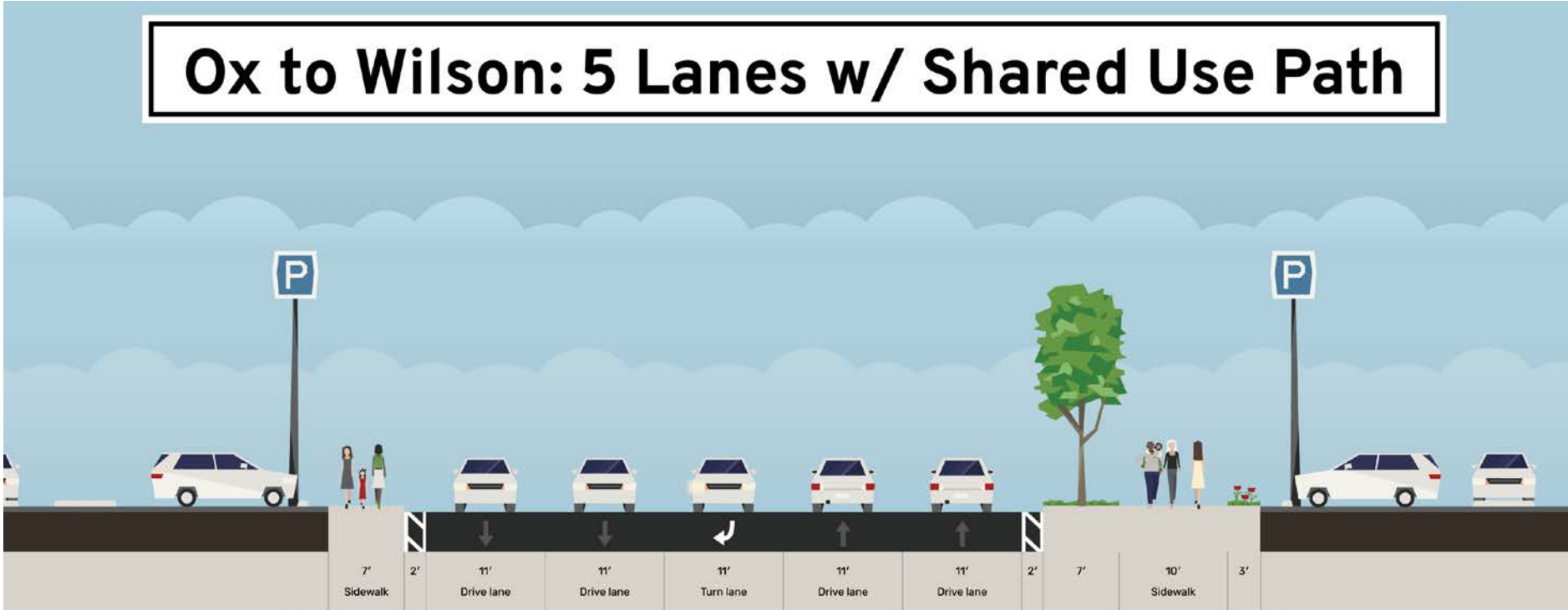
- Provides space for left turns.
- May improve some crash patterns.
- Excess width can be used for bike lanes/sidewalks/streetscape.
- Lower cost vs. widening
- Shorter crossing distances for pedestrians.
- Center turn lane provides easier access in and out of businesses.

Cons:

- Transition from interchange area problematic.
- **Reduced roadway capacity will lead to congestion. Eliminated from consideration**
- Less through lanes at the Wilson Road intersection would increase queue lengths.

Ox Point to Wilson – Option 3

Ox to Wilson: 5 Lanes w/ Shared Use Path



ROW=86'
Width=86'

Pros:

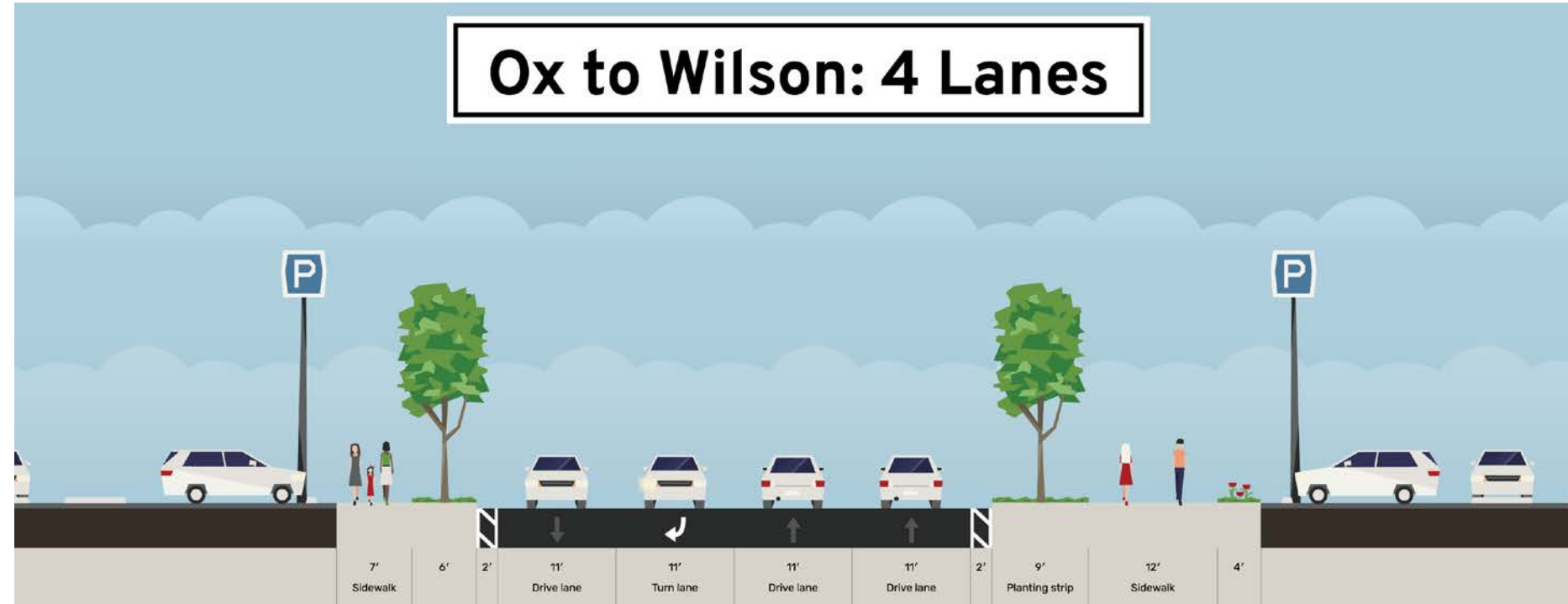
- Improved vehicle mobility.
- May improve crash patterns.
- Center turn lane provides easier access in and out of businesses.

Cons:

- Requires roadway widening.
- High cost.
- Wider pedestrian crossings.
- May increase speeds.
- Potential Property impacts.
- Increased roadway width could increase closed drainage system needs.

Ox Point to Wilson – Option 4

Ox to Wilson: 4 Lanes



ROW=86'
Width=86'

Pros:

- May improve crash patterns.
- Center turn lane provides easier access in and out of businesses.
- Shorter crossing distance for pedestrians at Wilson.
- Reserves ROW for bike/ped facilities.

Cons:

- Increased congestion on Route 1 SB, particularly at Wilson. Eliminated from consideration.

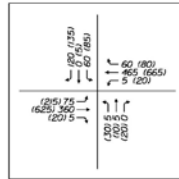
Route 1 and Wilson Road

LIST OF MAJOR ITEMS	
EQUIPMENT AND WORK ITEMS (ITEM 643.21)	QTY.
FURNISH AND INSTALL NATURAL FINISH ATOC MAINDEOT 32/48 SPEC GROUND MOUNT CABINET AND ECOSILITE COSALY ATC WITH LATEST FIRMWARE, INSTALLED, COMPLETE WITH ALL ANCILLARY EQUIPMENT AND WIRING INCLUDING FIELD MONITORING UNIT WITH INTEGRATION INTO MAINDEOT'S EXISTING CLOUD BASED CENTRAL MANAGEMENT SYSTEM	1 EA
FURNISH AND INSTALL BLACK POLYCARBONATE ONE-WAY 3-SECTION, 12-INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, BI-MODAL LED AND 5-INCH LOUVERED BACK PLATES WITH 3 INCH RETROREFLECTIVE BORDERS MOUNTED ON MAST ARM	10 EA
FURNISH AND INSTALL BLACK POLYCARBONATE ONE-WAY 4-SECTION, 12-INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, BI-MODAL LED AND 5-INCH LOUVERED BACK PLATES WITH 3 INCH RETROREFLECTIVE BORDERS MOUNTED ON MAST ARM	1 EA
FURNISH AND INSTALL ONE-WAY, 16 X 18-INCH LED SIDE OF POLE MOUNTED COUNTDOWN PEDESTRIAN SIGNAL HEAD	2 EA
FURNISH AND INSTALL ONE-WAY, 16 X 18-INCH LED TOP OF POST MOUNTED COUNTDOWN PEDESTRIAN SIGNAL HEAD	6 EA
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9"X12" R10-3a INFORMATIONAL SIGN	8 EA
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1 EA
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4 EA
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1 EA
FURNISH AND INSTALL MAST ARM MOUNTED SIGNS	11 EA
REMOVE AND SALVAGE EXISTING SIGNAL EQUIPMENT	1 LS
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	1 LS
FURNISH AND INSTALL NON-INVASIVE STOP LINE DETECTION, 4 APPROACHES, COMPLETE (ITEM 643.21)	1 LS
FURNISH AND INSTALL NON-INVASIVE ADVANCE VEHICLE DETECTION SYSTEM, 1 APPROACH, COMPLETE (ITEM 643.22)	1 LS

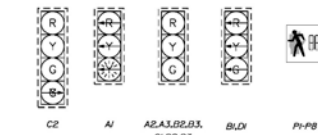
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATION ONLY

STRUCTURE LIST			
STRUCTURE	DESCRIPTION	STA/OFFSET	FOUNDATION
(AC)	CONTROLLER CABINET	102-35.2/63.8 LT	148"X30"X48"
(A1)	8' PEDESTAL POLE	102-52.5/41.6 LT	20" DIAMETER
(B1)	8' PEDESTAL POLE	102-54.2/38.6 RT	20" DIAMETER
(B2)	8' PEDESTAL POLE	102-08.8/45.9 RT	20" DIAMETER
(C1)	8' PEDESTAL POLE	101-30.8/46.3 RT	20" DIAMETER
(C2)	8' PEDESTAL POLE	101-52.5/45.7 LT	20" DIAMETER

SYSTEM DESIGN VOLUMES AM (PM)

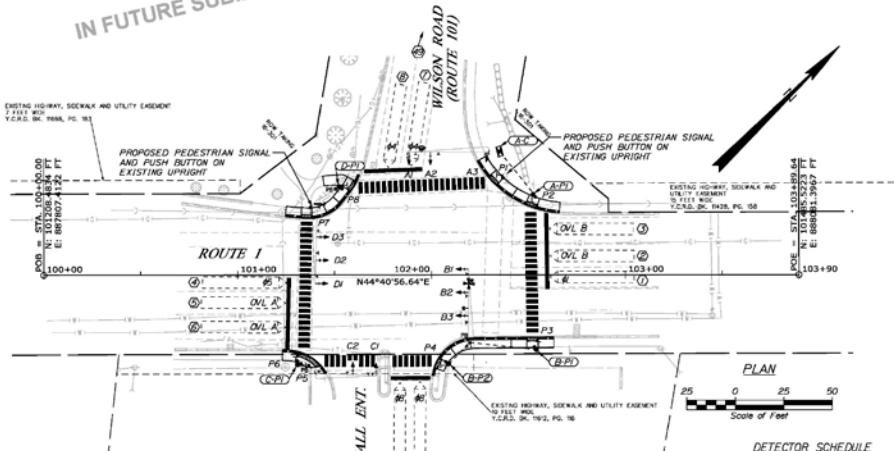


PROPOSED INDICATIONS



NOTE: ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

SIGNAL TIMINGS TO BE PROVIDED IN FUTURE SUBMITTAL



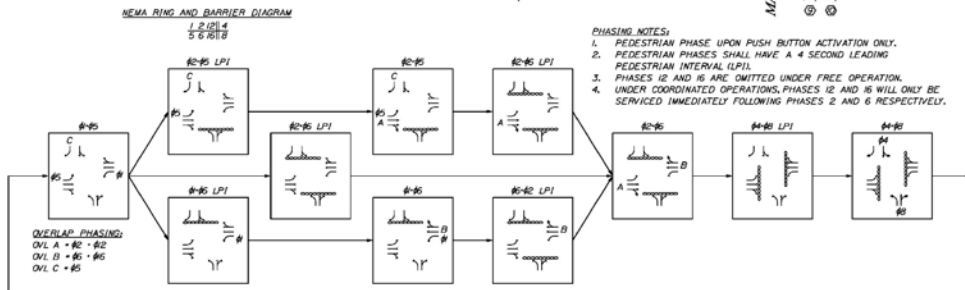
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	# CALLED	# EXT.	MODE	A-ADV. PUS-BAR	DELAY TIME	EXT. TIME
①	ROUTE 1 SB LEFT	1	1	B	-	-	-
②	ROUTE 1 SB THRU	6	6	B	-	-	-
③	ROUTE 1 SB THRU/RIGHT	6	6	B	-	-	-
④	ROUTE 1 NB LEFT	5	5	B	-	-	-
⑤	ROUTE 1 NB THRU	2	2	B	-	-	-
⑥	ROUTE 1 NB THRU/RIGHT	2	2	B	-	-	-
⑦	ROUTE 101 LEFT/THRU	4	4	B	-	-	-
⑧	ROUTE 101 RIGHT	5	5	B	-	-	-
⑨	MALL ENTRANCE LEFT	8	8	B	-	-	-
⑩	MALL ENTRANCE THRU/RIGHT	8	8	B	-	-	-
⑪	ROUTE 101 ADVANCE	5	5	A	-	-	-

* SEE ADVANCED DILEMMA ZONE DETAIL 135 MP10

PHASING NOTES:

1. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY.
2. PEDESTRIAN PHASES SHALL HAVE A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
3. PHASES 12 AND 16 ARE OMITTED UNDER FREE OPERATION.
4. UNDER COORDINATED OPERATIONS, PHASES 12 AND 16 WILL ONLY BE SERVICED IMMEDIATELY FOLLOWING PHASES 2 AND 6 RESPECTIVELY.



Option #1 No Change (Existing)

Pros:

- No cost

Cons:

- No bicycle accommodations.
- Long pedestrian crossings.

Option #2 Single Through Lanes (matches three lane Section)

Pros:

- Reduces crossing distances for pedestrians.
- Provides space for streetscape and enhanced active transportation facilities.

Cons:

- Medium cost.
- **Decreased traffic capacity. Eliminated from consideration.**

Option #3 Single Through Lane SB (matches Four lane Section)

Pros:

- Reduces crossing distances for pedestrians.
- Provides space for streetscape and enhanced active transportation facilities.

Cons:

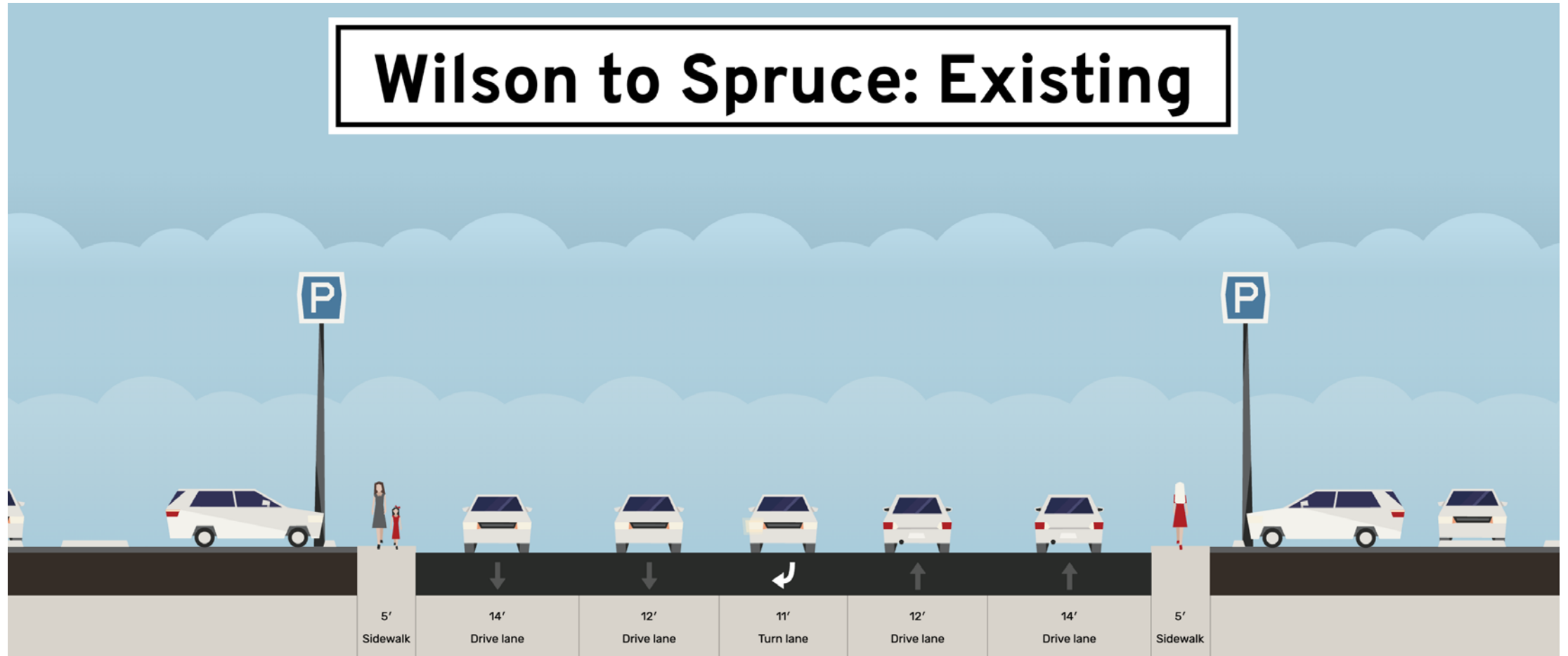
- Medium cost.
- **Decreased traffic capacity on Rte. 1 southbound. Eliminated from consideration.**

Transportation Alternatives



Wilson to Spruce Creek– Existing

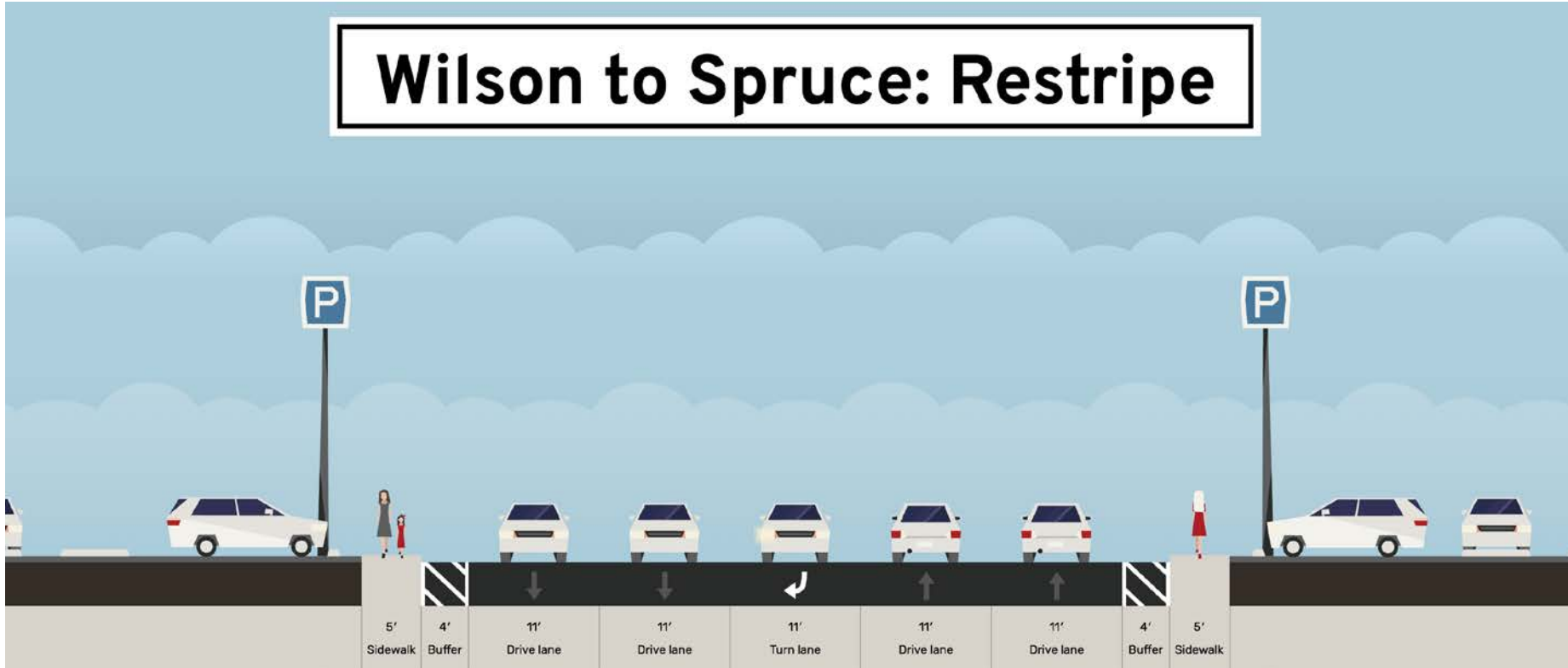
Wilson to Spruce: Existing



ROW=73' - varies
Width=73'

Wilson to Spruce Creek– Option 1

Wilson to Spruce: Restripe



ROW=73' - varies
Width=73'

Pros:

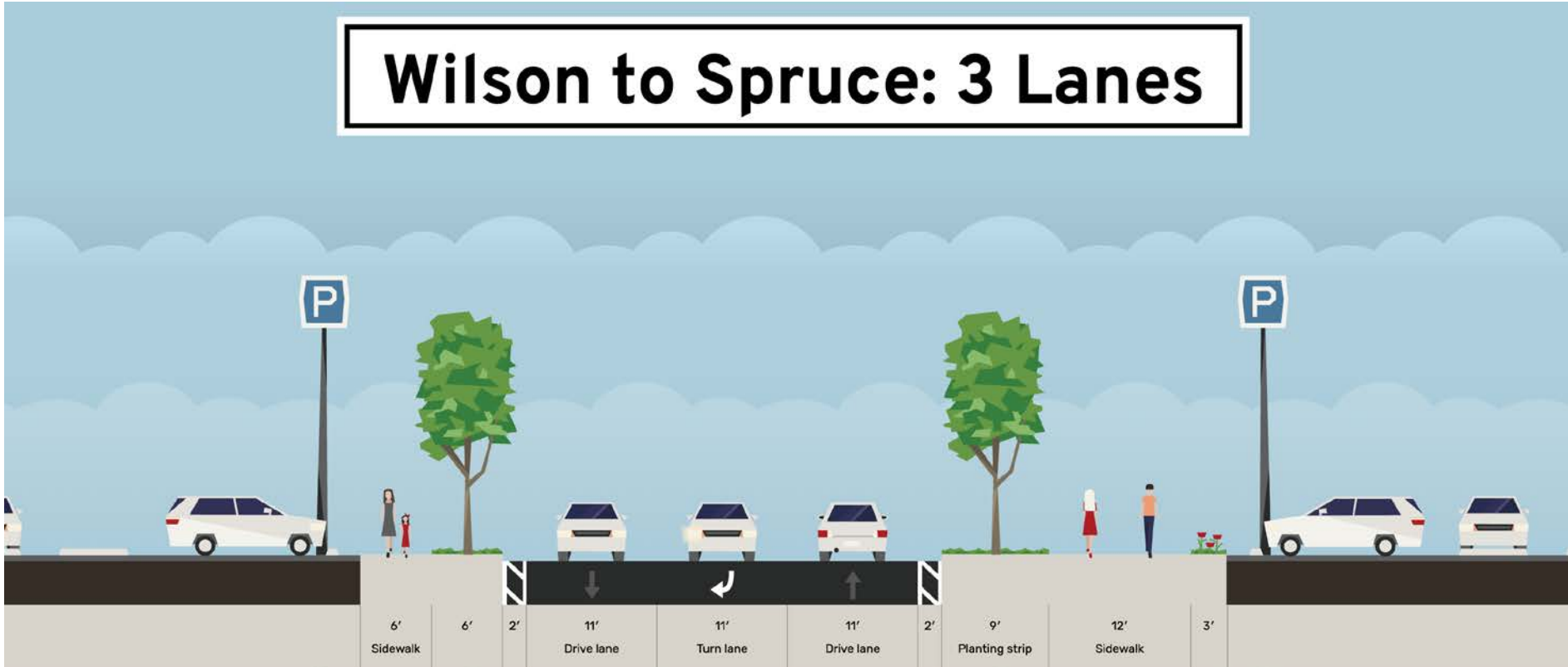
- No or low cost.
- No widening impacts to abutting properties.
- Provides good traffic mobility.

Cons:

- Does not address safety issues.
- Wide roadway with no bike facilities.
- No improvement to sidewalk conditions.

Wilson to Spruce Creek– Option 2

Wilson to Spruce: 3 Lanes



ROW=73' - varies
Width=73'

Pros:

- Provides space for left turns.
- Excess width can be used for bike lanes/sidewalks/streetscape.
- Lower cost vs. widening
- Shorter crossing distances for pedestrians.

Cons:

- **Reduced roadway capacity will lead to congestion. Eliminated from consideration.**
- Less through lanes at the Wilson Road intersection would increase queue lengths.

Wilson to Spruce Creek– Option 3

Wilson to Spruce: 5 Lanes w/ Path

Pros:

- Maintains vehicle mobility.
- Provides path on east side.
- No widening required.

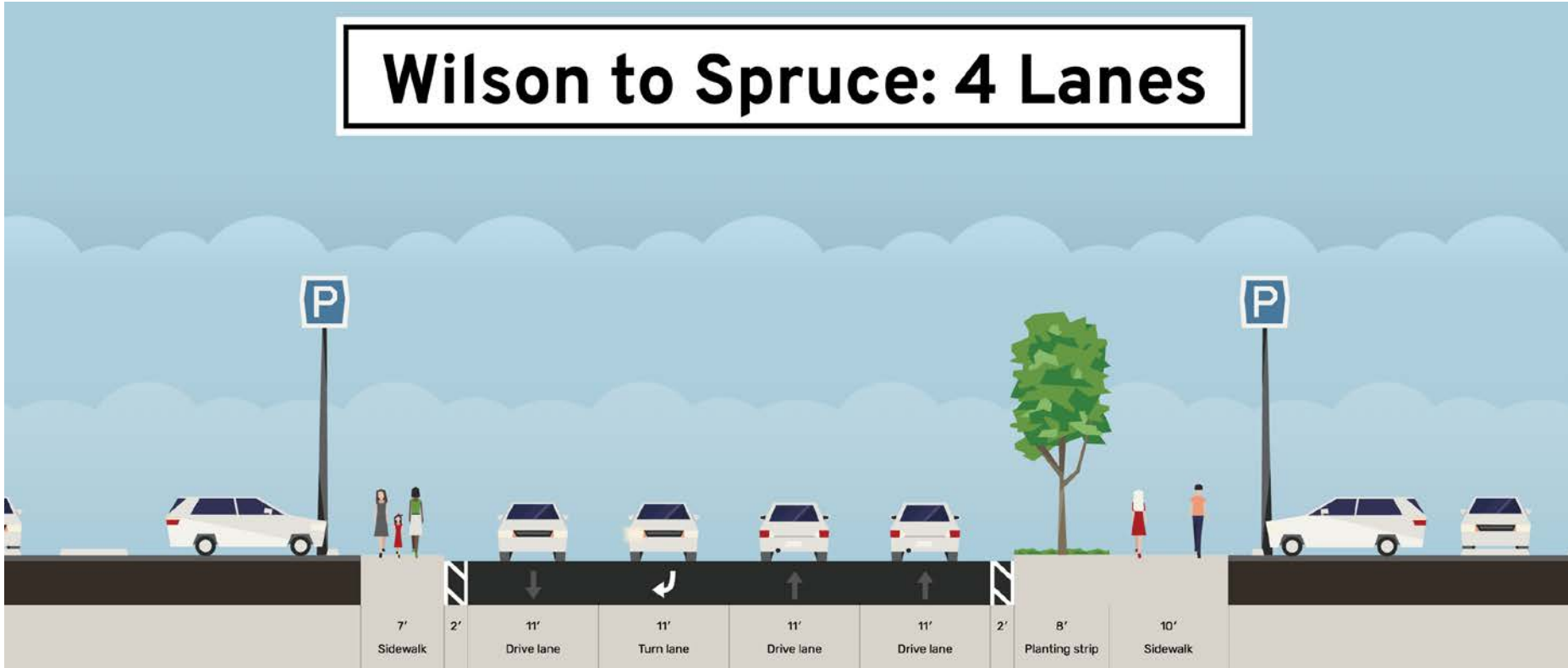
Cons:

- Low cost.
- Wide pedestrian crossings.
- Potential property impacts.
- Path is minimum width and no separation to roadway.
- No improvement to the sidewalk on west side.

ROW=73' - varies
Width=73'

Wilson to Spruce Creek– Option 4

Wilson to Spruce: 4 Lanes



ROW=73' - varies
Width=73'

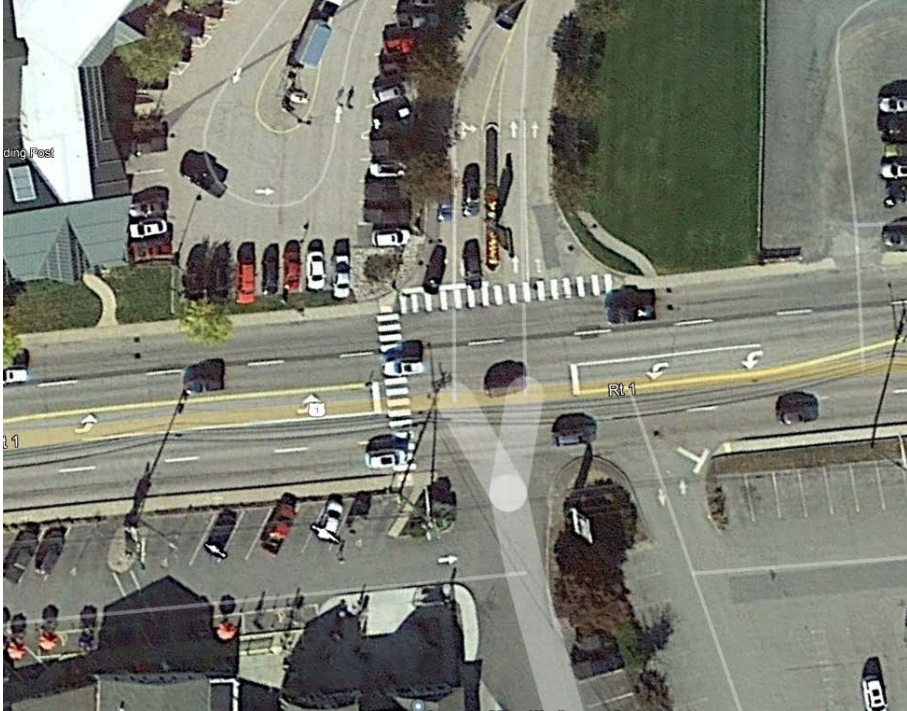
Pros:

- Shorter crossing distances for pedestrians.
- Reserves ROW for bike/ped facilities.

Cons:

- Increased congestion on Route 1 SB. Eliminated from consideration.
- Less expensive vs. 5-Lane Section.

Route 1 and KTP/Cottage Way



Option #1 STOP Signs (Existing)

Pros:

- Free flow traffic on Route 1.
- No cost.

Cons:

- Long delays from side streets.
- Does not address safety issue.
- Pedestrian crossing uncontrolled.

Option #2 Traffic Signal

Pros:

- Reduced delay for side streets.
- Controlled crossing for pedestrians.
- Likely mitigates safety problem.

Cons:

- Route 1 traffic must stop.
- Medium cost.
- Proximity to Wilson Road could create queueing issues between the intersections.

Option #3 Roundabout

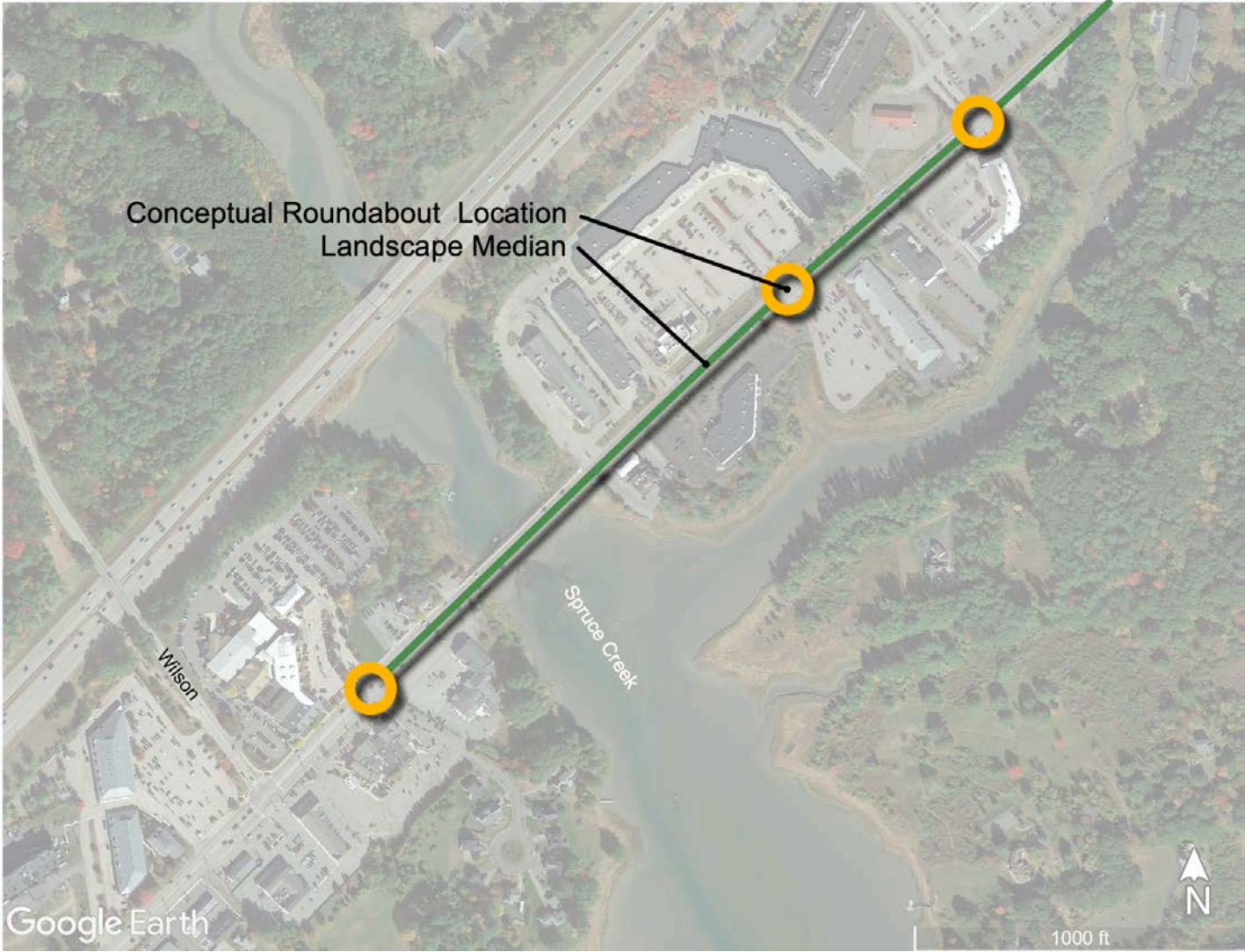
Pros:

- Reduced delay for side streets.
- Controlled crossing for pedestrians.
- Likely mitigates safety problem.

Cons:

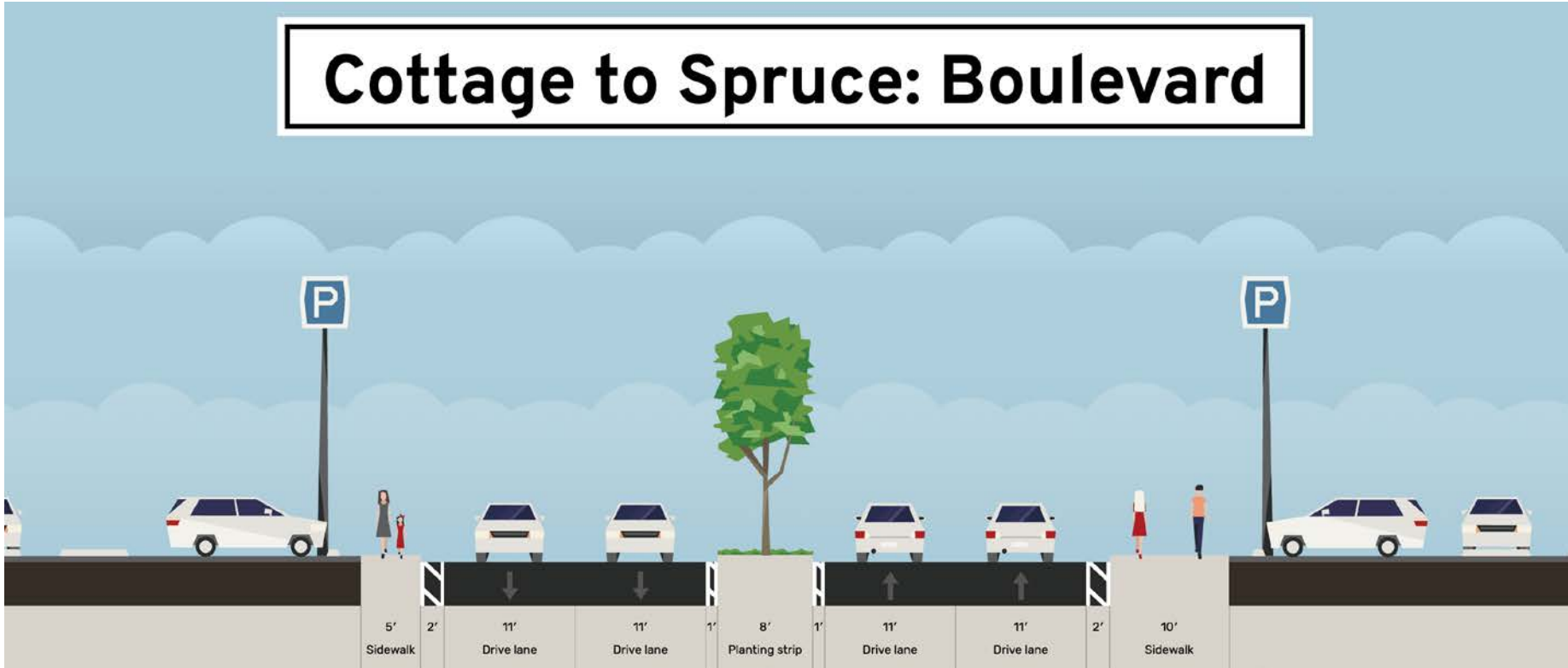
- Requires large amount of space. This would cause impacts to surrounding properties.
- High cost.

Boulevard / Roundabout Concept



Wilson to Spruce Creek

Cottage to Spruce: Boulevard



ROW=73' - varies
Width=73'

Pros:

- Maintains vehicle mobility.
- Provides path on east side.
- No widening required.
- Traffic calming from median.
- Safety benefits from median and access control.

Cons:

- Moderate cost.
- Wide pedestrian crossings.
- Potential property impacts.
- Path is minimum width and no separation to roadway.
- No improvement to the sidewalk on west side.

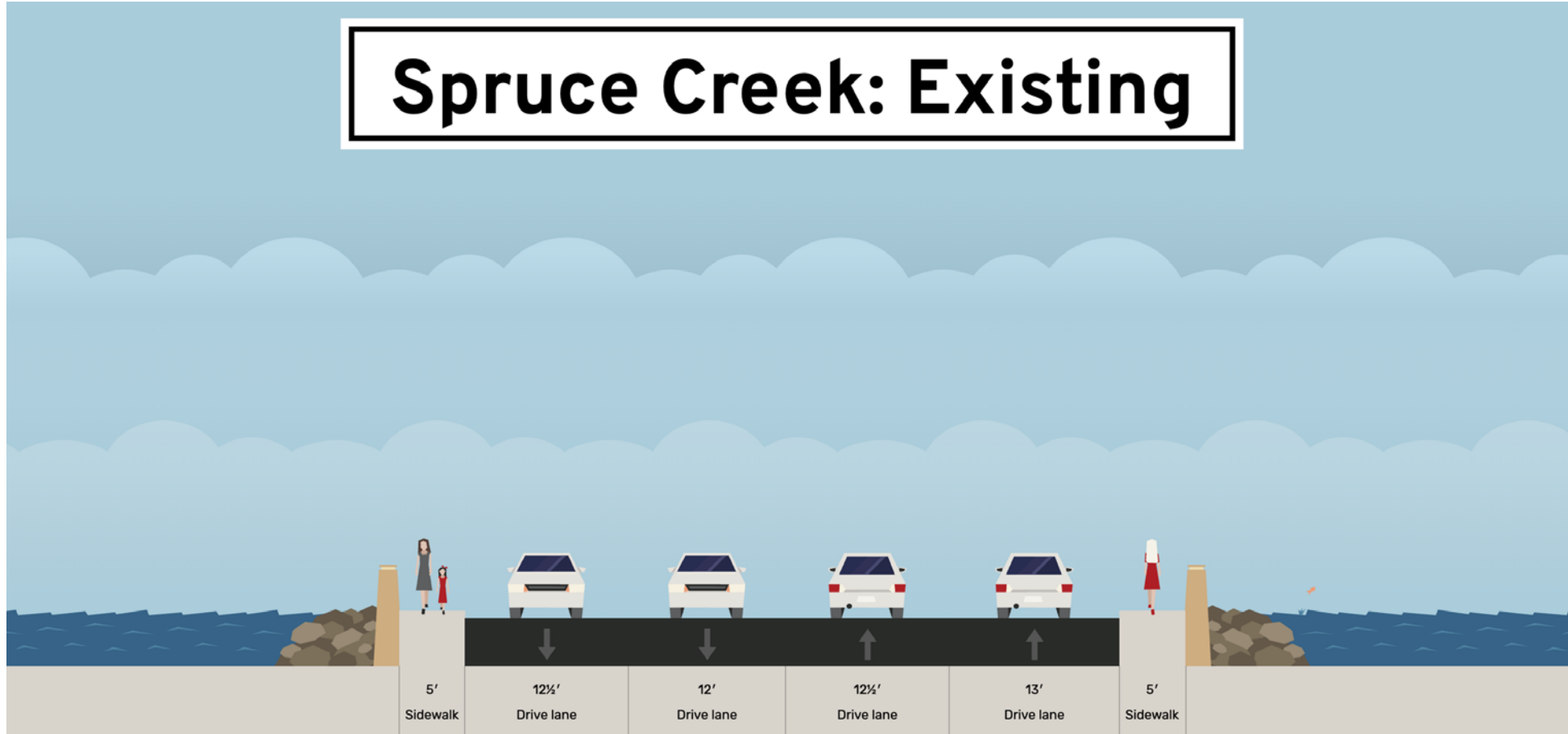
Transportation Alternatives



Spruce Creek

Spruce Creek – Existing

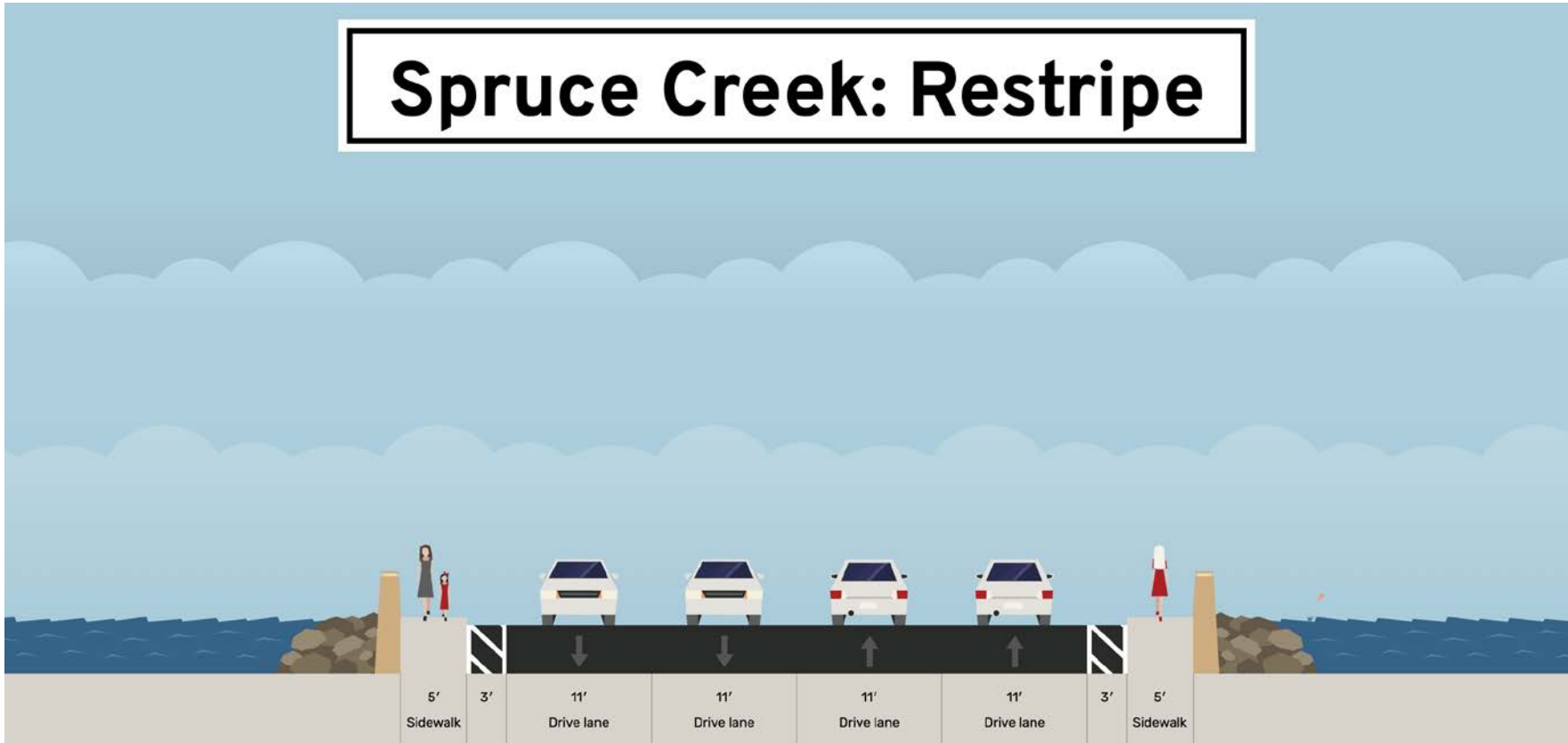
Spruce Creek: Existing



ROW=77'
Width=60'

Spruce Creek – Option 1

Spruce Creek: Restripe



ROW=77'
Width=60'

Pros:

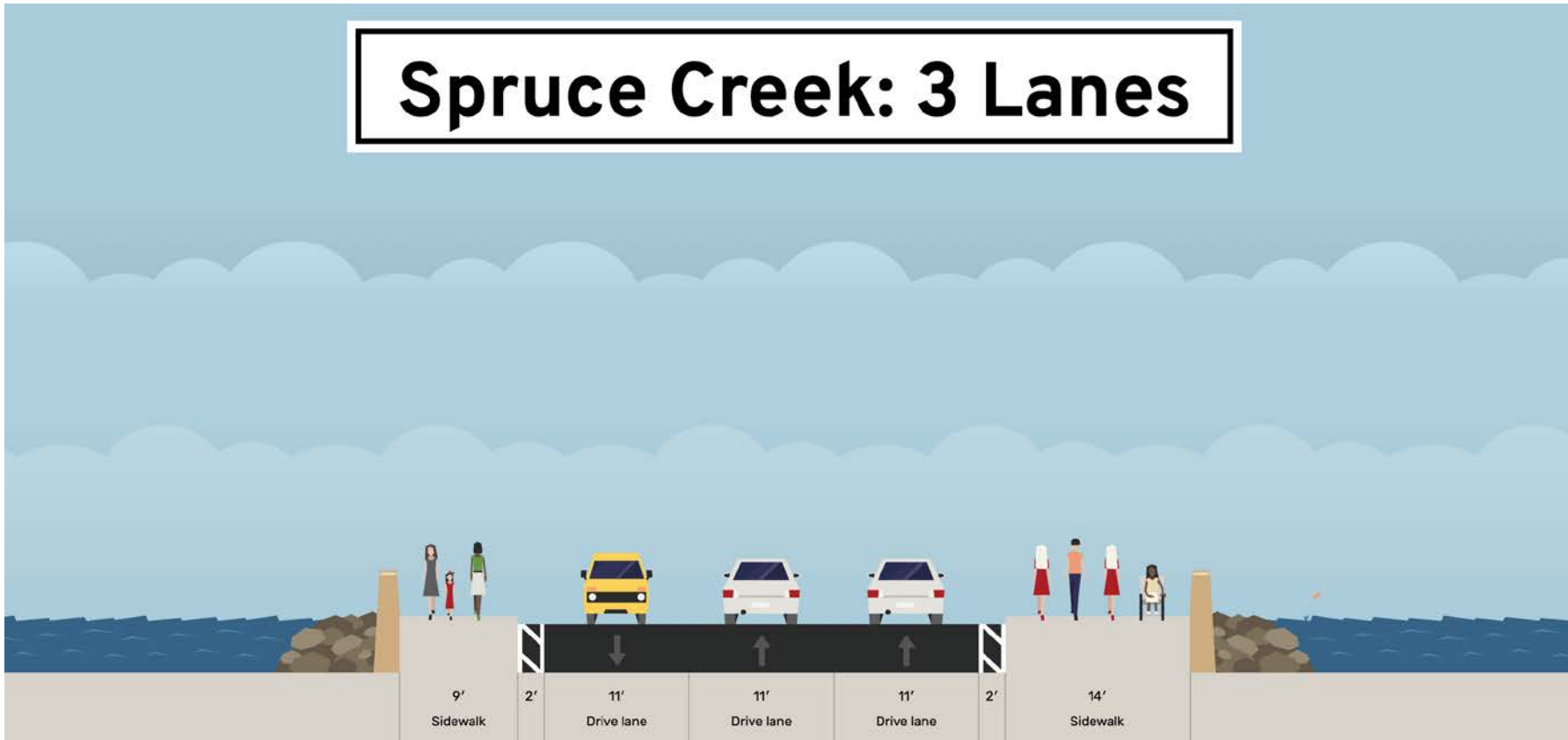
- No or low cost.
- No widening.
- Provides good traffic mobility.
- Provides some space for bicyclists.

Cons:

- Wide roadway with no bike facilities.
- No improvement to sidewalk conditions.
- Does not address sea-level rise.

Spruce Creek – Option 2

Spruce Creek: 3 Lanes



ROW=77'
Width=60'

Pros:

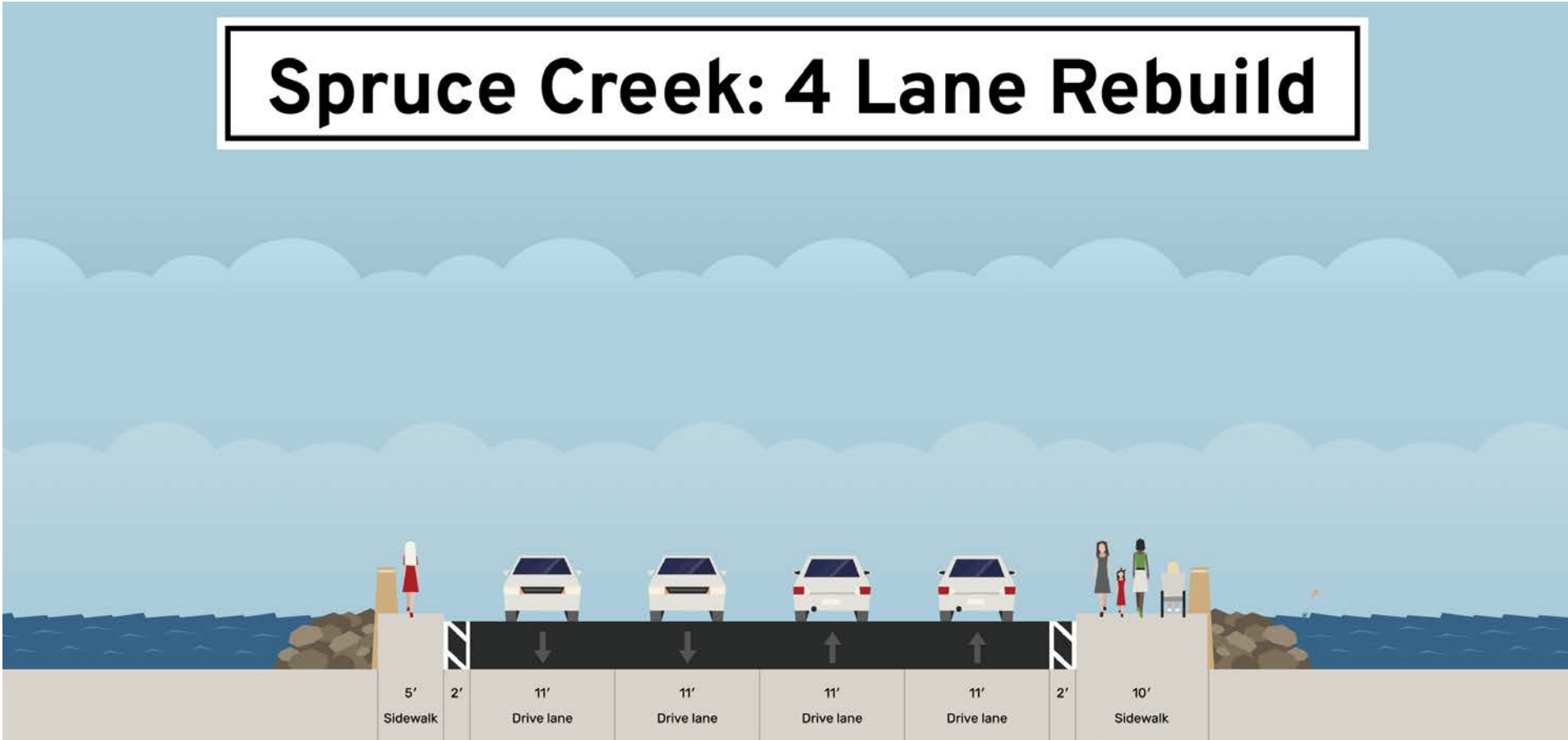
- Provides a path on east side.
- Improves sidewalk width on west side.
- Medium cost.

Cons:

- May increase congestion southbound. Feasibility to be determined with further analysis.
- Does not address sea-level rise.

Spruce Creek – Option 3

Spruce Creek: 4 Lane Rebuild



ROW=77'
Width=63'

Pros:

- Provides a path on east side.
- Raises crossing for seal-level rise.

Cons:

- High cost.
- May impact properties due to increased bridge elevation.
- Sidewalk not improved on west side.

Spruce Creek – Option 4

Spruce Creek: New Foot Bridge

Pros:

- Provides separate path.
- Raises crossing for seal-level rise.

Cons:

- High cost.
- May impact properties due to increased bridge elevation.
- Sidewalk not improved on west side.

ROW=77'
Width=60'

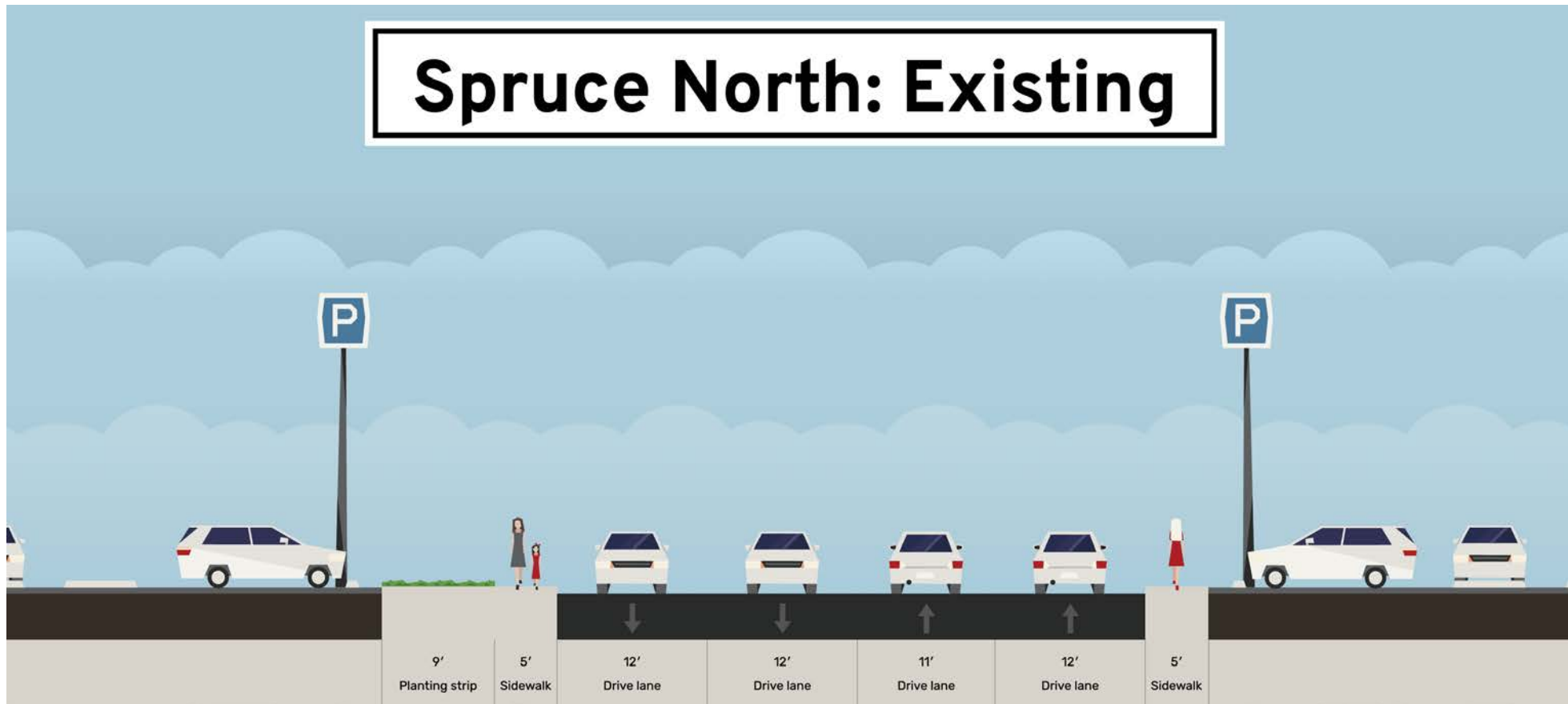
Transportation Alternatives



Kittery Route 1 Key Map For Cross-Section Locations

Spruce
Creek
to
Outlets
at
Kittery

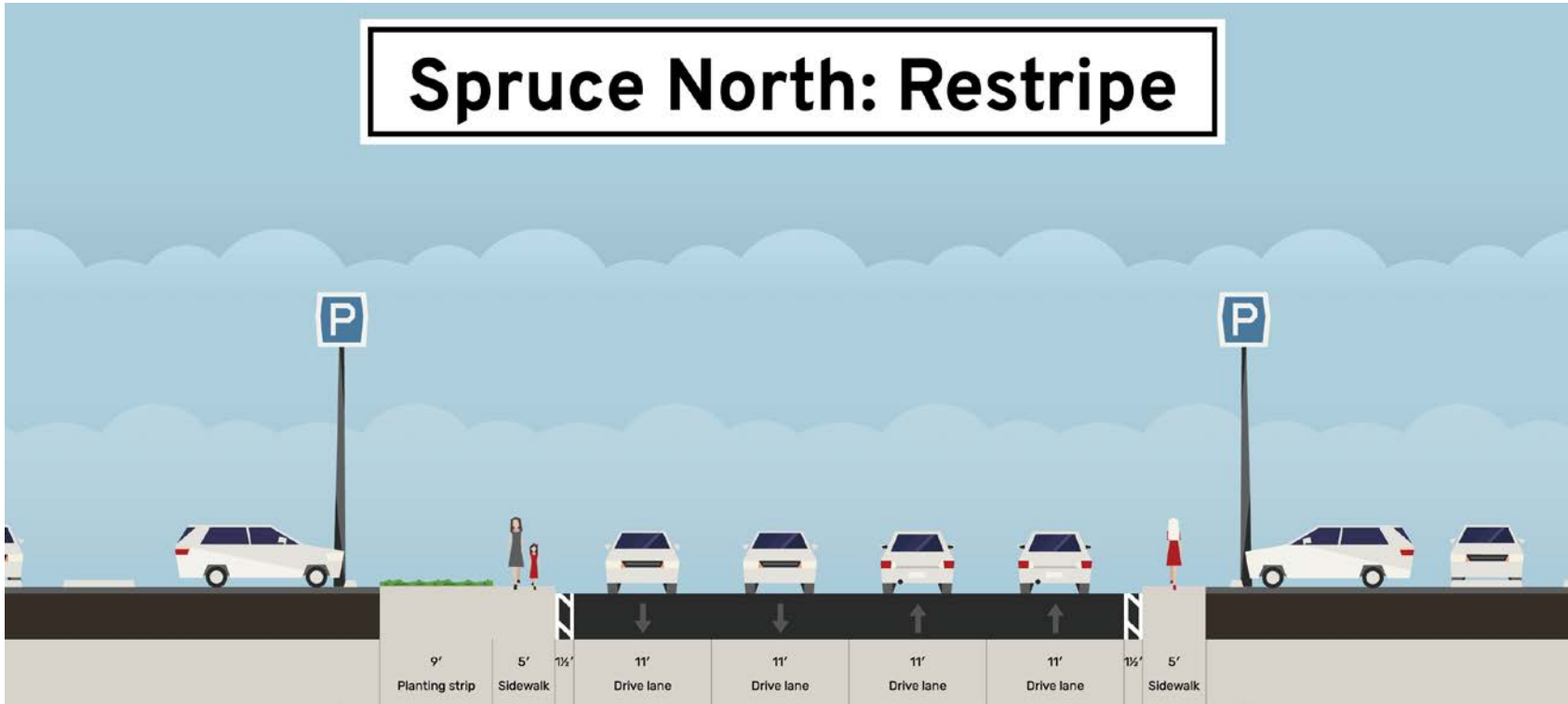
Spruce Creek to Outlets at Kittery– Existing



ROW=66' – at Narrowest/Varies
Width=57'

Spruce Creek to Outlets at Kittery– Option 1

Spruce North: Restripe



ROW=66' – at Narrowest/Varies
Width=57'

Pros:

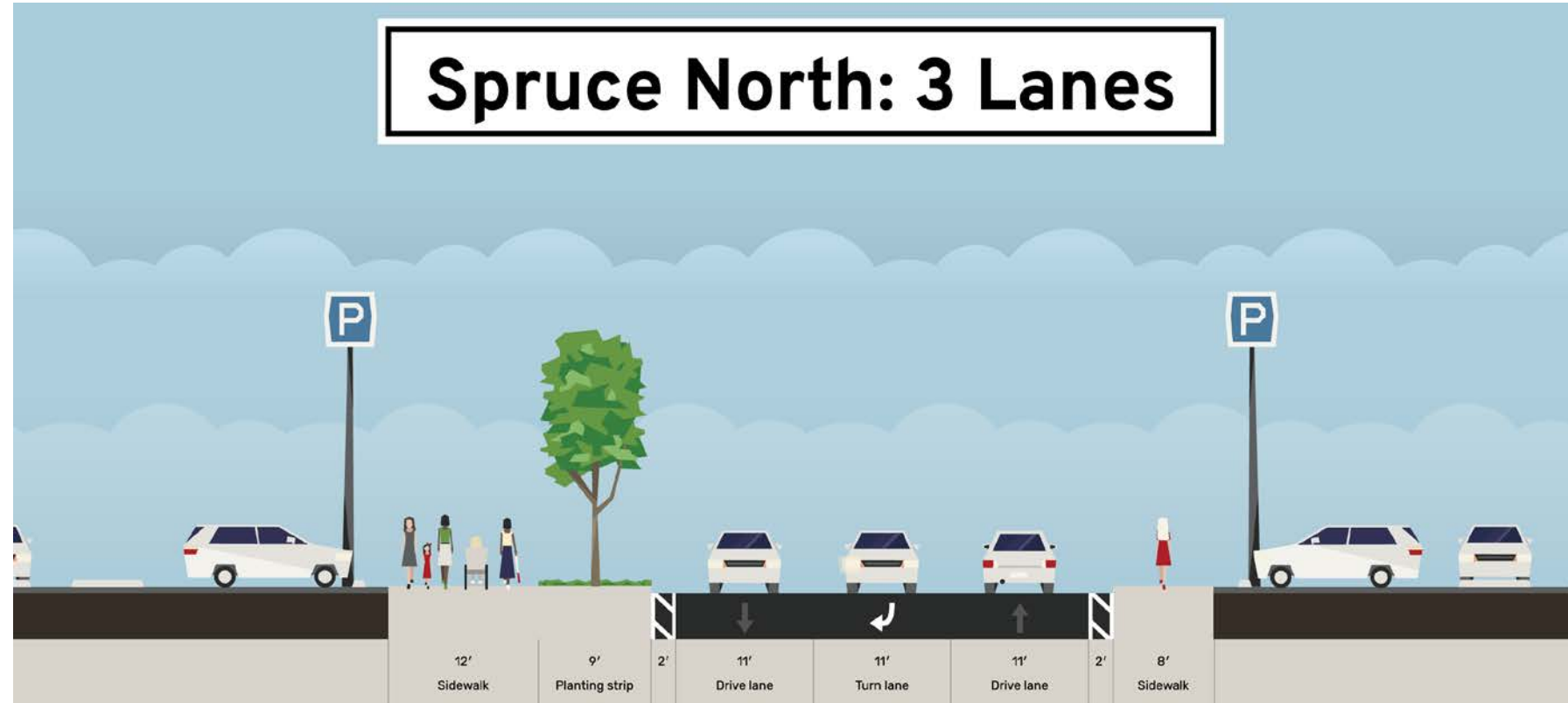
- Good traffic mobility.
- No or low cost.
- No widening impacts to abutting properties.

Cons:

- Wide pedestrian crossings.
- Does not address safety issues.
- Mobility impacted by left turns.
- No bicycle accommodations.
- Low-level pedestrian facilities.

Spruce Creek to Outlets at Kittery– Option 2

Spruce North: 3 Lanes



ROW=66' – at Narrowest/Varies
Width=66'

Pros:

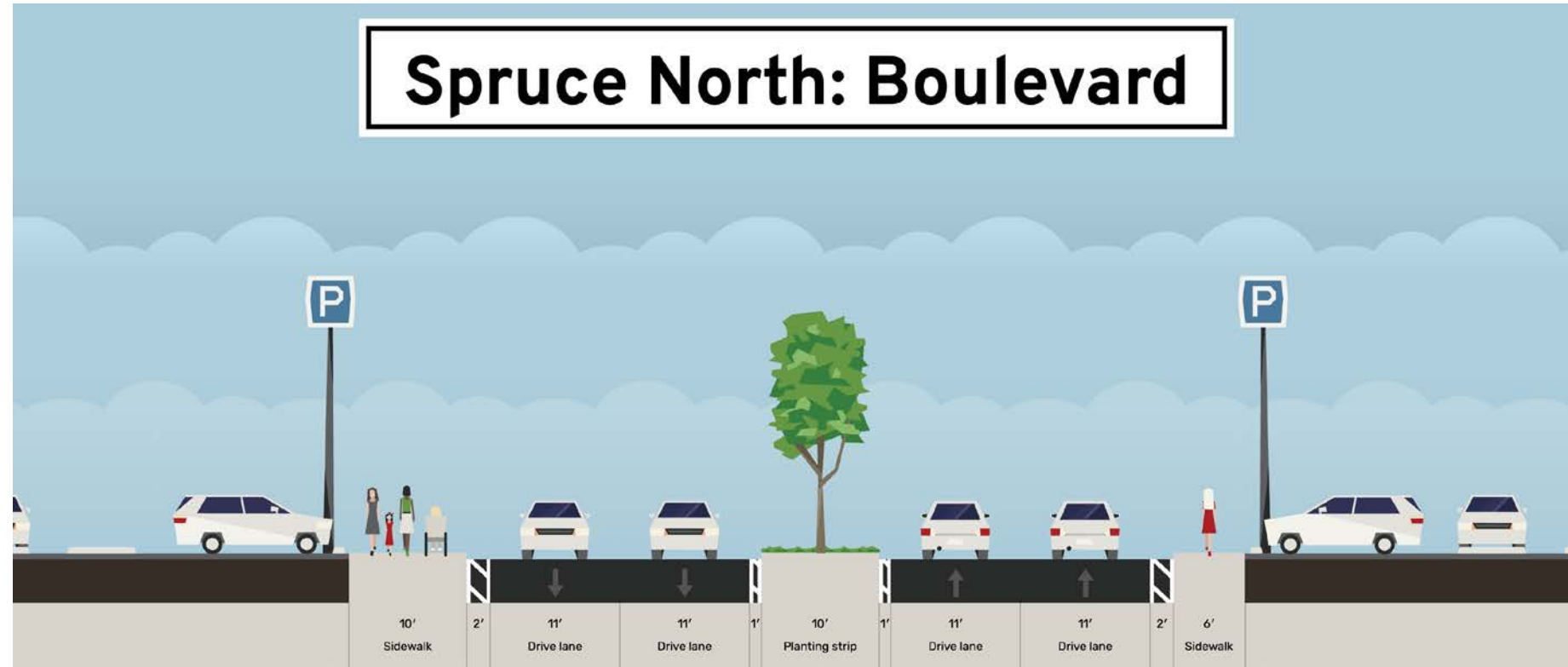
- May improve some crash patterns.
- Excess width can be used for bike lanes/sidewalks/streetscape.
- No or little ROW impacts.
- Medium cost.
- Shorter crossing distances for pedestrians.
- Center turn lane provides easier access in and out of businesses.

Cons:

- Traffic mobility will be reduced, particularly on weekends. Feasibility to be determined with further analysis.
- Less through lanes at intersections would increase queue lengths.

Spruce Creek to Outlets at Kittery– Option 3

Spruce North: Boulevard



ROW=66' – at Narrowest/Varies
Width=76'

Pros:

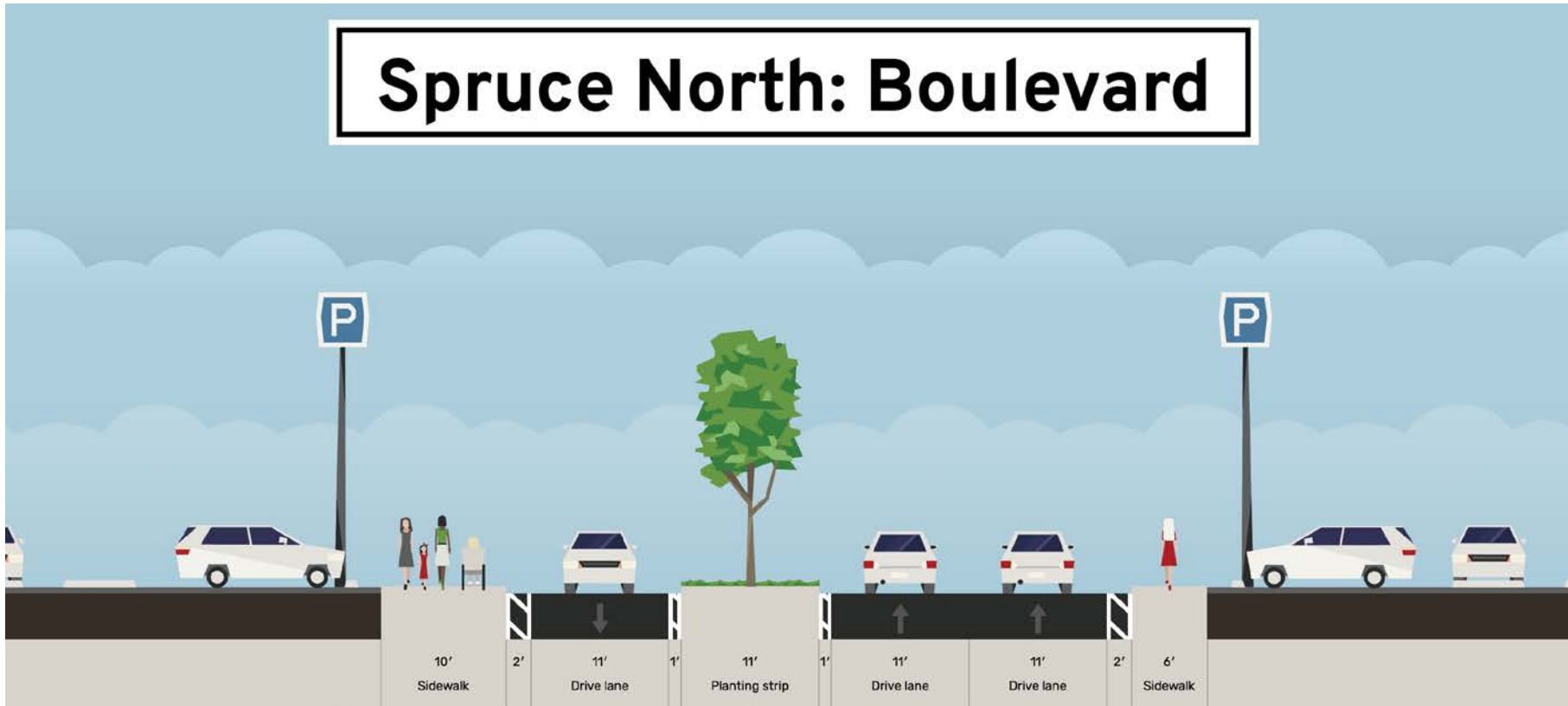
- Good vehicle mobility.
- Removes left turns.
- Could reduce the number of crashes by removing the left turning movements.
- Path provided on west side, although minimum width.

Cons:

- If combined with roundabouts, requires large amounts of space. This would cause impacts to surrounding properties.
- If combine with signals, U-turn movements not accommodated.
- ROW impacts.
- High cost.

Spruce Creek to Outlets at Kittery– Option 4

Spruce North: Boulevard



ROW=66' – at Narrowest/Varies
Width=66'

Pros:

- Removes left turns.
- Could reduce the number of crashes.
- No or little ROW impacts.
- Excess width can be used for bike lanes/sidewalks.

Cons:

- Capacity reduced on Route 1 southbound. Feasibility to be determined with further analysis.
- If combined with roundabouts, require large amounts of space. This would cause impacts to surrounding properties.
- If combine with signals, U-turn movements not accommodated.
- High cost.
- Emergency response SB may be constrained

Route 1 and Outlets Signals North of Spruce Creek

Option #1: Traffic Signals (Existing)

Pros:

- No cost.
- Allows for pedestrian phase to cross intersection.

Cons:

- None

Option #2: Roundabout

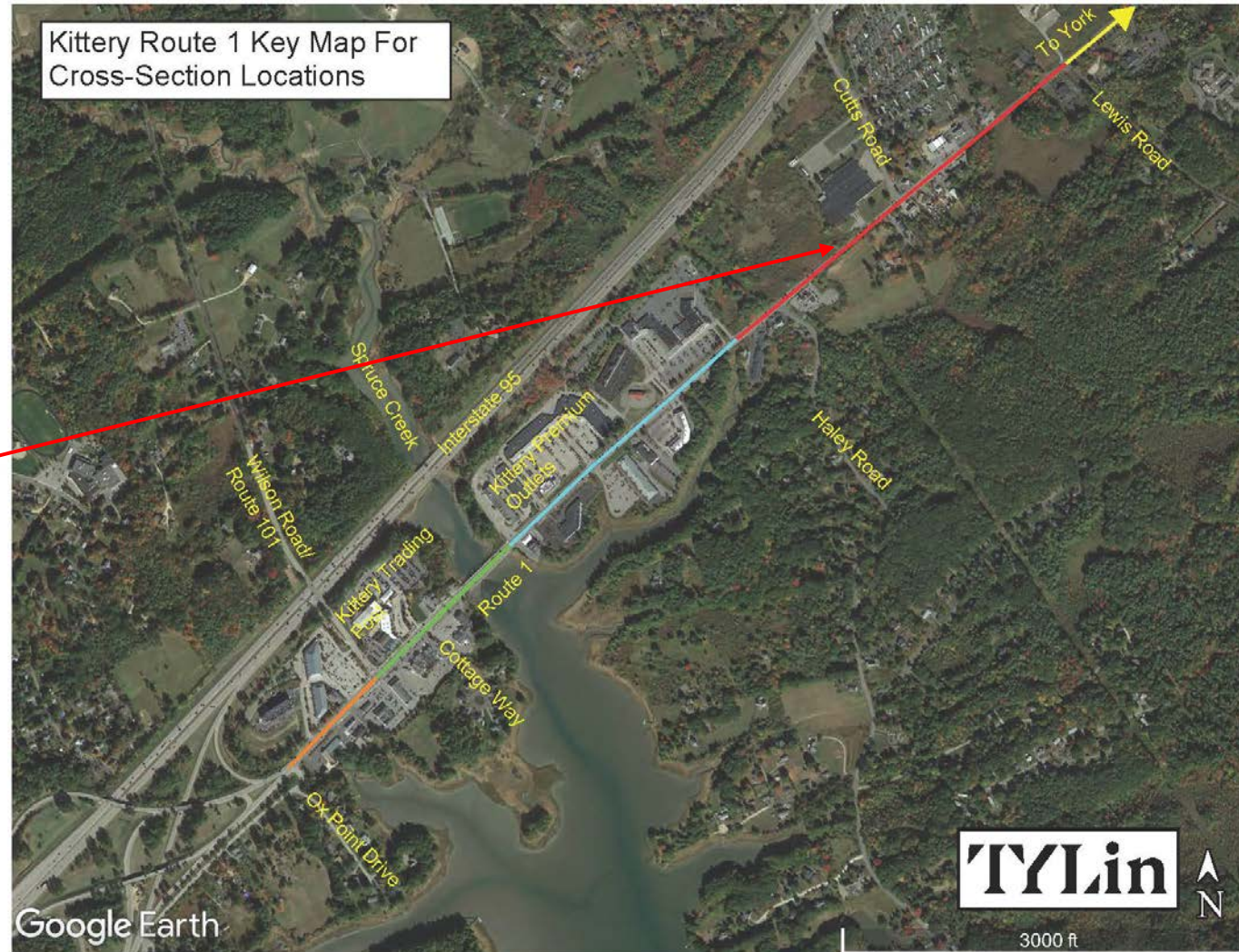
Pros:

- Traffic on Route 1 is free flowing.
- Good overall traffic operations.
- Removes left turns.
- Could reduce the number of crashes by removing the left turning movements.

Cons:

- Roundabouts require large amounts of space. This would cause impacts to surrounding properties.
- Large ROW impacts.
- High cost.

Transportation Alternatives



Kittery Route 1 Key Map For Cross-Section Locations

Outlets at Kittery to Lewis Road

Outlets at Kittery to Lewis Road

Roadway Segment Configuration/Geometry

Option #1: Two Lanes (Existing)

Pros:

- No cost.

Cons:

- Does not provide turn opportunities into and out of businesses.

Option #2: Three Lanes (CTWLTL)

Pros:

- Improves traffic safety.
- Improves traffic mobility.

Cons:

- Medium cost.
- Potential ROW impacts.

Haley/Cutts/Lewis Intersections

Route 1/Haley Road

- Remove NB right-turn lane.
- Change SB lanes to a dedicated left lane and a through lane.

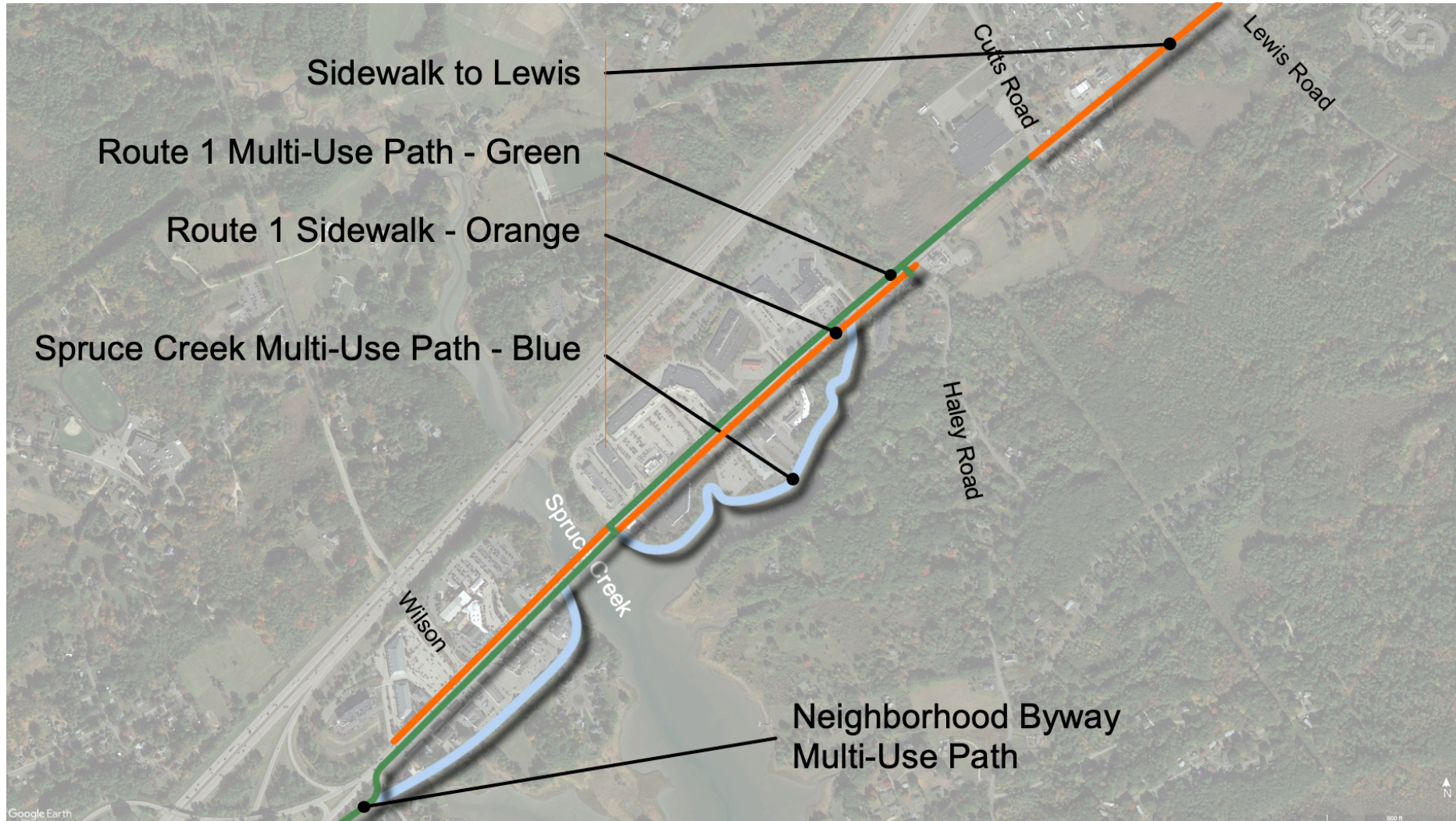
Route 1/Cutts Road

- Reconfigure Cutts Road approach for separate left and right lanes.

Route 1/Lewis Road

- No change – monitor for safety issues

Pedestrian and Bike System



Outlets at Kittery to Lewis Road - Sidewalks

Option #1: Sidewalk on Both Sides

Pros:

- Provides facility for walking to land uses to the north.

Cons:

- High cost.
- Lower pedestrian demand.
- Potential for ROW impacts.

Option #2: Sidewalk on West Side

Pros:

- Connectivity to residential land uses on Cutts Road and sidewalk being built near Lewis Road.

Cons:

- High cost.
- Low pedestrian demand.
- Potential for ROW impacts.

Option #3: Sidewalk on East Side

Pros:

- Connectivity to some businesses like Dunkin and Coachman Inn.

Cons:

- High cost.
- Low pedestrian demand.
- Potential for ROW impacts.

Option #4: No sidewalks

Pros:

- No cost.
- No ROW impacts.

Cons:

- Unsafe for pedestrians.

Outlets at Kittery to Lewis Road - Bicyclists

Bicycle Facilities

Option #1: Use of Existing Shoulders

Pros:

- No cost.

Cons:

- Sharing road would be a high stress condition.

Option #2: Widen for formal bike lanes.

Pros:

- Provides facility as recommended in bike/ped plan.

Cons:

- High cost.
- Potential for ROW impacts.

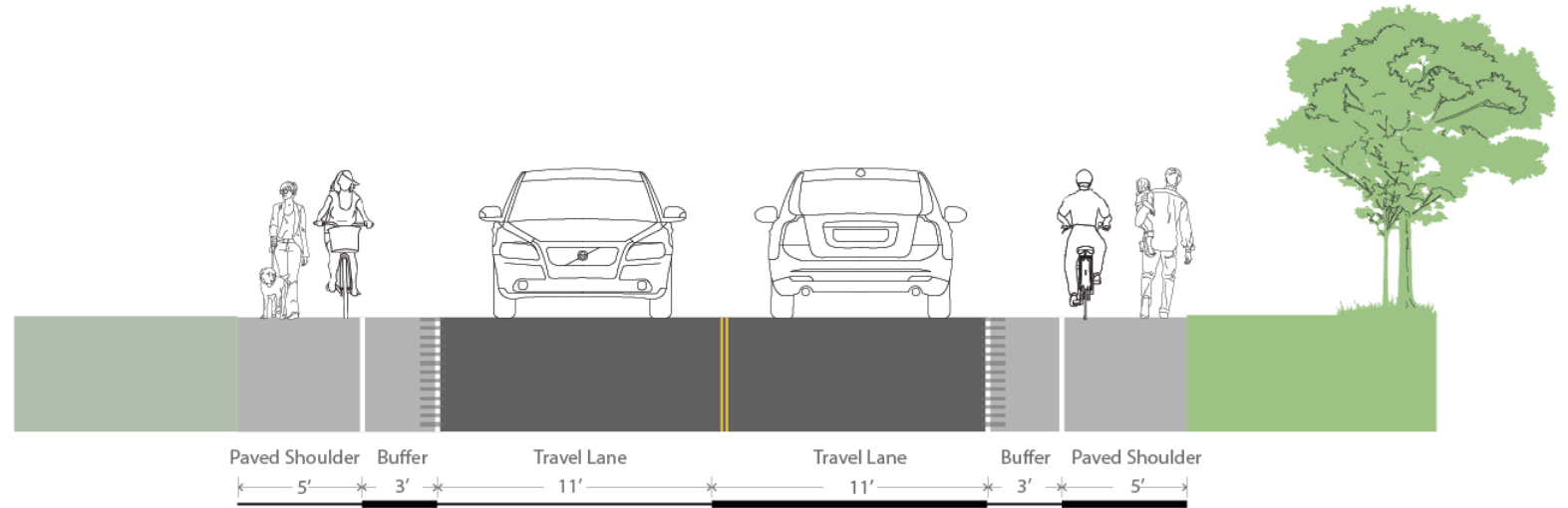
Option #3: Construct Shared Use Path

Pros:

- Fully protected facility.

Cons:

- High cost.
- Potential for ROW impacts.
- Not recommended in bike/ped plan.



KITTERY TOWN-WIDE PEDESTRIAN & BICYCLE PLAN (2021)

Lewis Road to York

Roadway Segment Configuration/Geometry

- Maintain one lane in each direction.
- Consider left turn lanes at future driveways generating high traffic volumes.

Pedestrian Facilities

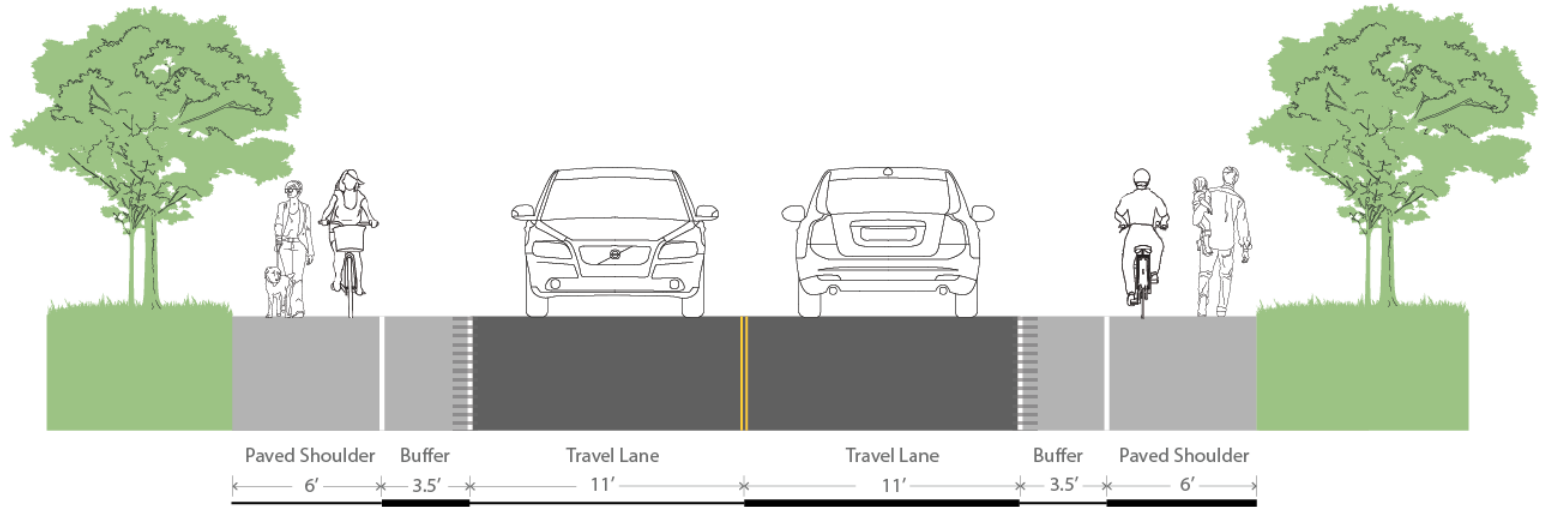
- No sidewalks.
- Bike/Ped Plan recommends use of buffered shoulder.

Bicycle Facilities

- Provide buffered bike lanes/shoulder as recommended in bike/ped plan.

Beech Ridge Road/Southside Road

- Upgrade traffic signal equipment for improved traffic efficiency.



KITTERY TOWN-WIDE PEDESTRIAN & BICYCLE PLAN (2021)

Study Schedule

Public Meeting #2	January 24, 2024
Project Team Meeting to Discuss Volume Forecasts and Initial Alternatives Analysis	October 2023
Transmit Initial Working Draft of Alternatives Analysis	November 2023
Project Team Meeting to Review Draft Alternatives Analysis Technical Memorandum	December 2023
Public Meeting #2	January 2024
Transmit Draft Final Report	March 2024
Project Team Meeting to Review Draft Report	March 2024
Public Meeting #3	April 2024
Project Team Meeting to Review Revised Draft	April 2024
Transmit Final Report	May 2024



Public Comments

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Untitled Map
Write a description for your map.

Legend



Google Earth

1000 ft

